

Service
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21PV385/01/07/39/58

Service Manual

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Survey of versions:

/01	PAL-BG, EURO
/07	PAL I, UK/IRELAND
/39	PAL/SECAM-BG+PAL/SECAM-L/L',FRANCE
/58	PAL-BG/DK+SECAM-BG/DK,EAST-EURO

VN: 1A

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.



MAIN SECTION

TV-VCR COMBINATION

Sec. 1: Main Section

- Adjustment Procedures
- Schematic Diagrams and CBA's
- Exploded Views
- Mechanical and Electrical Parts List

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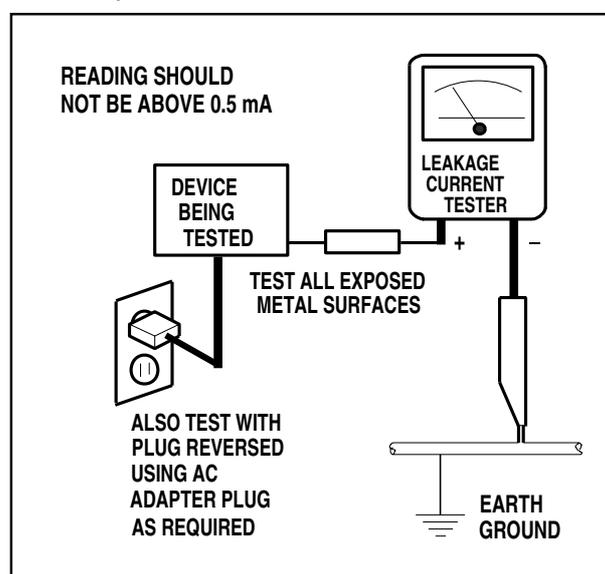
IMPORTANT SAFETY PRECAUTIONS

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.

Safety Precautions for TV Circuit

1. **Before returning an instrument to the customer**, always make a safety check of the entire instrument, including, but not limited to, the following items:
 - a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**
 - b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
 - c. **Antenna Cold Check** - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.
 - d. **Leakage Current Hot Check** - With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leak-

age current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

- e. **X-Radiation and High Voltage Limits** - Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servic-

ing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning** - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. **Hot Chassis Warning** -

a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known

earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.

c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

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

Precautions during Servicing

- A.** Parts identified by the () symbol are critical for safety.
Replace only with part number specified.
- B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C.** Use specified internal wiring. Note especially:
- 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
- D.** Use specified insulating materials for hazardous live parts. Note especially:
- 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers
 - 4) Insulators for transistors.
- E.** When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- F.** Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)
- G.** Check that replaced wires do not contact sharp edged or pointed parts.
- H.** When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.
- I.** Also check areas surrounding repaired locations.
- J.** Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
- K.** Crimp type wire connector
When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.
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 the center position. Be sure to crimp fully to the complete closure of the tool.
- L.** When connecting or disconnecting the VCR connectors, first, disconnect the AC plug from AC supply socket.

Safety Check after Servicing

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

1. Clearance Distance

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

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d) (d')
220 to 240 V	$\geq 3\text{mm}(d)$ $\geq 6\text{mm}(d')$

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

2. Leakage Current Test

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

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 both terminals of load Z. See Fig. 2 and following table.

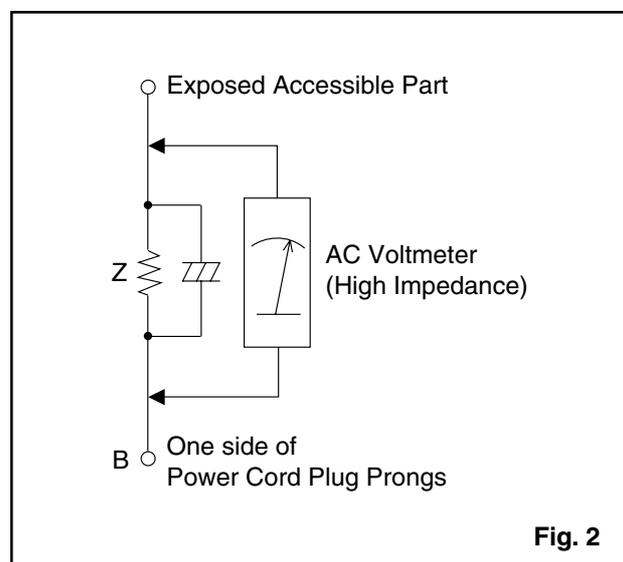
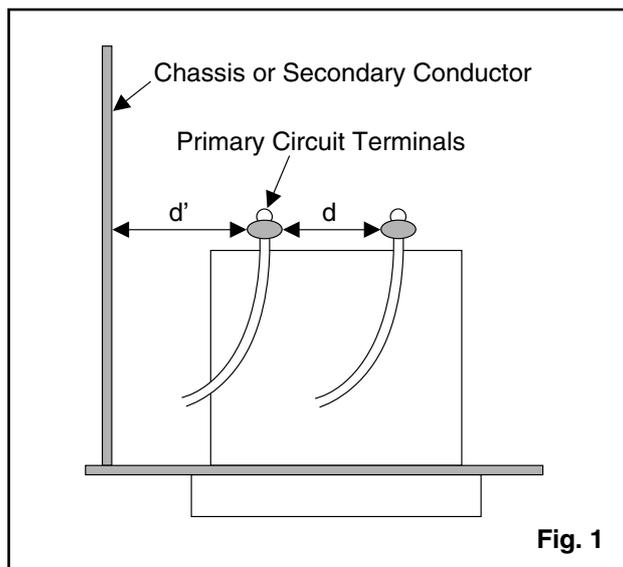


Table 2: Leakage current ratings for selected areas

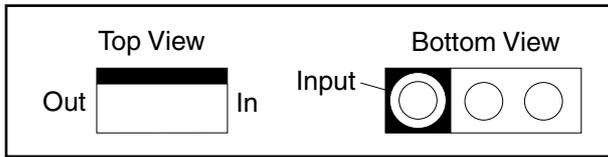
AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
220 to 240 V	2k Ω RES. Connected in parallel	$i \leq 0.7\text{mA AC Peak}$ $i \leq 2\text{mA DC}$	RF or Antenna terminals
	50k Ω RES. Connected in parallel	$i \leq 0.7\text{mA AC Peak}$ $i \leq 2\text{mA DC}$	A/V Input, Output

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

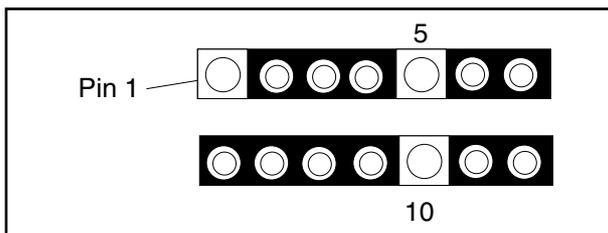
STANDARD NOTES FOR SERVICING

Circuit Board Indications

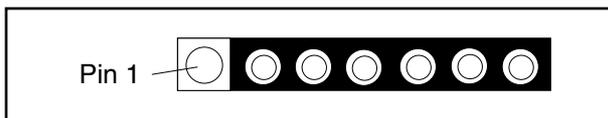
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



2. For other ICs, pin 1 and every 5th pin is indicated as shown:

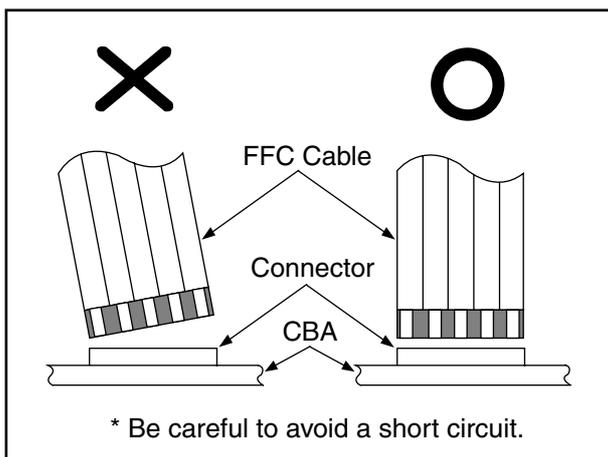


3. The 1st pin of every pin connector are indicated as shown:



Instructions for Connectors

1. When you connect or disconnect 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.



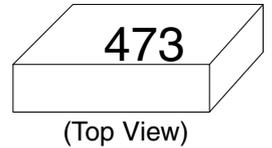
[CBA= Circuit Board Assembly]

How to Read the Values of the Rectangular Type Chip Components

Example:

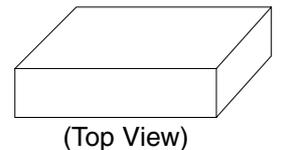
- (a) Resistor

$$= 473 = 47 \text{ [k}\Omega\text{]}$$



- (b) Capacitor

= Not Shown

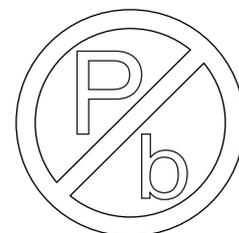


Caution:

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

Pb (Lead) Free Solder

Pb free mark will be found on PCBs used Pb free solder. (Refer to figure.) For PCBs with Pb free mark, be sure to use Pb free solder. For PCBs without Pb free mark, use standard solder.



Pb free mark

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

1.1. Pb free solder

- a. Soldering Iron
Use a soldering iron for Pb free solder.
- b. Solder
Be sure to use Pb free solder.
- c. Soldering time
Do not apply heat for more than 4 seconds.
- d. Preheating
Leadless capacitor must be preheated before installation. (130°C~150°C, for about two minutes.)

1.2. Standard solder

- 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 capacitor must be preheated before installation. (130°C~150°C, for about two minutes.)

Notes:

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

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 leadless component with a twisting motion.

Notes:

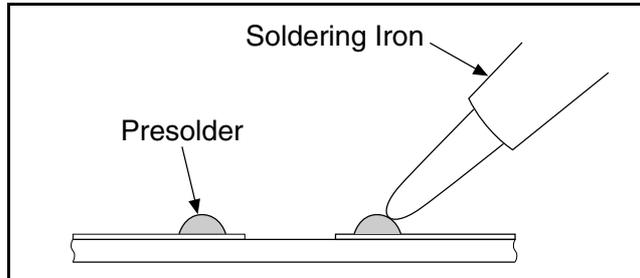
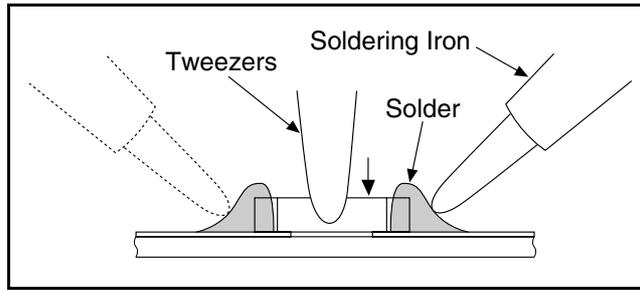
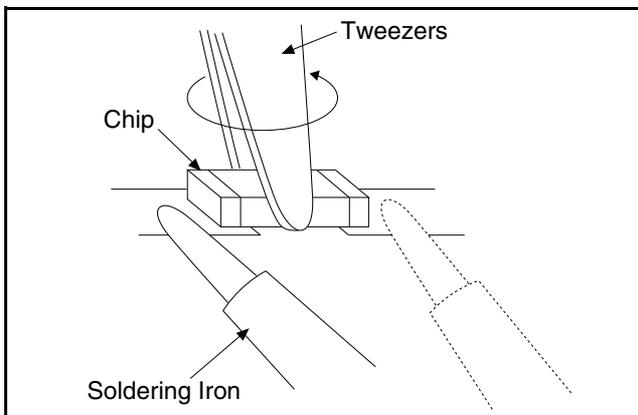
- a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.
- b. Take care not to break the copper foil on the printed board

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.



How to Remove / Install Flat Pack IC

Caution:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not apply the hot air to the chip parts around the Flat Pack-IC for over 6 seconds as damage may occur to the chip parts. Put Masking Tape around the Flat Pack-IC to protect other parts from damage. (Fig. S-1-2)
3. The Flat Pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or solder lands under the IC when removing it.

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

- a. Prepare the Hot - Air Flat Pack - IC Desoldering Machine, then apply hot air to Flat Pack - IC (about 5~6 seconds). (Fig. S-1-1)
- b. Remove the Flat Pack- IC with tweezers while applying the hot air.

With Soldering Iron:

- a. 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)
- b. 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:

- a. 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)

- b. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
- c. Pull up on the wire as the solder melts so as to lift the IC leads from the CBA contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

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 CBA, it may be damaged if force is used.

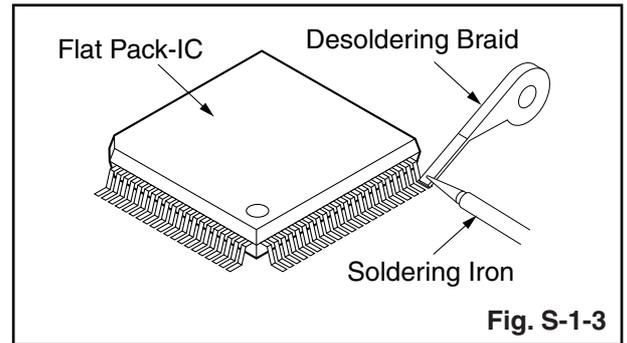


Fig. S-1-3

2. Installation

- a. Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the CBA, so you can install a replacement Flat Pack - IC more easily.
- b. The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the CBA when positioning for installation. Then pre - solder the four corners of the Flat Pack - IC (See Fig. S-1-7).
- c. Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

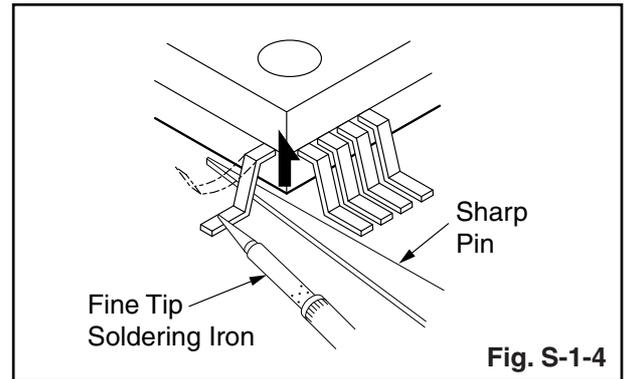


Fig. S-1-4

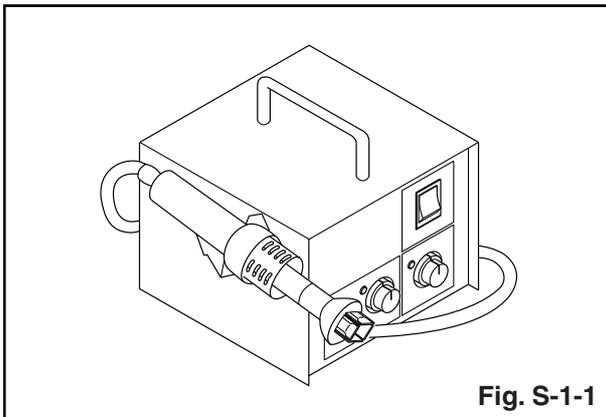


Fig. S-1-1

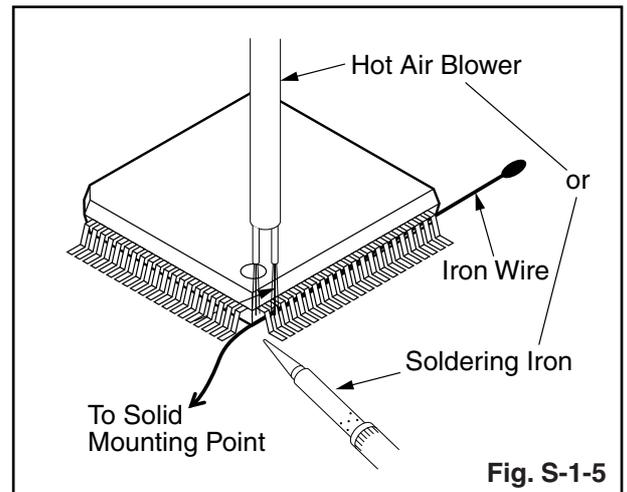


Fig. S-1-5

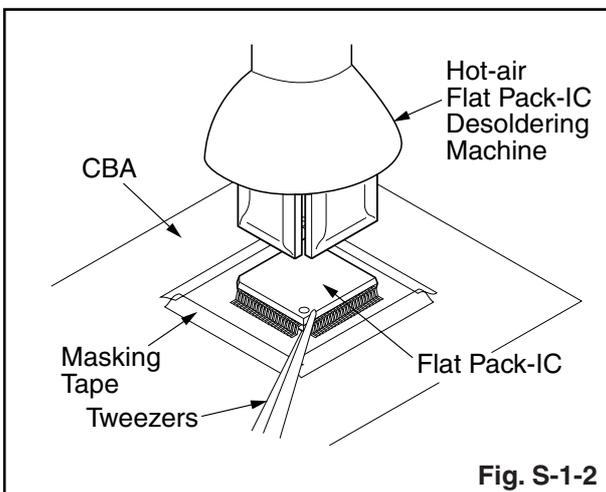


Fig. S-1-2

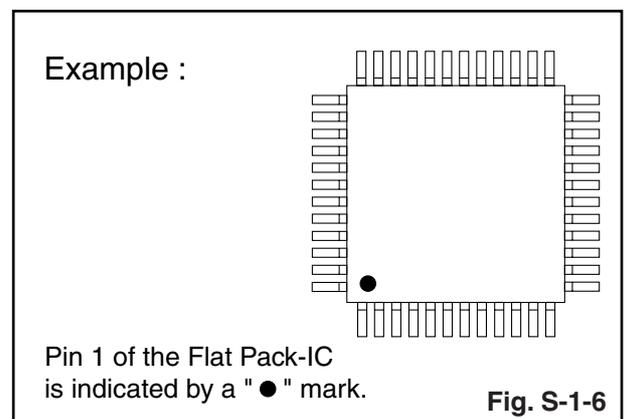
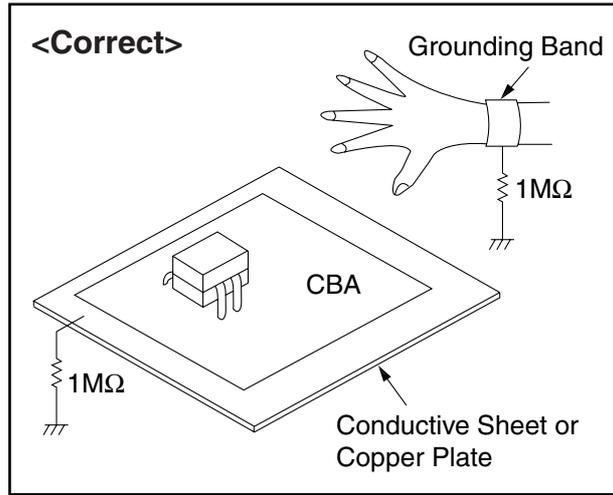
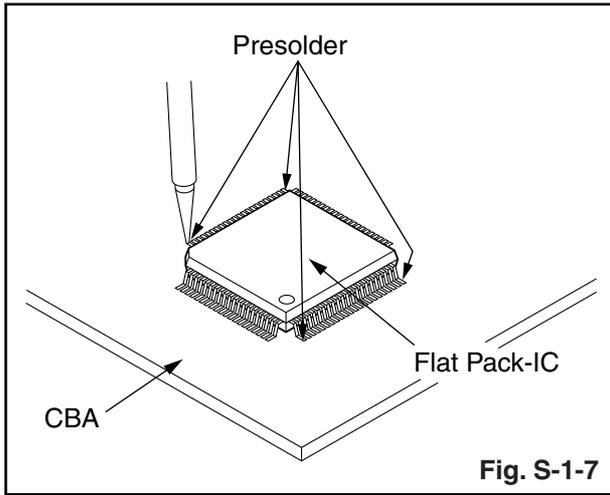


Fig. S-1-6



Instructions for Handling Semiconductors

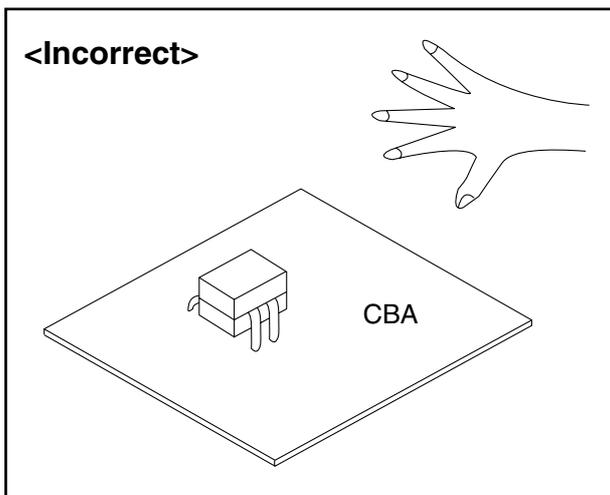
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

Ground for Human Body

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

Ground for Work Bench

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



PREPARATION FOR SERVICING

How to Enter the Service Mode

Caution: 1

- Optical sensors system are used for Tape Start and End Sensor on 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 Q202 (START SENSOR) and Q201 (END SENSOR) with Insulation Tape or enter the service mode to activate Sensor Inhibition automatically.

Note: Avoid playing, rewinding or fast forwarding the tape to its beginning or end, because both Tape End Sensors are not active.

How to Enter the Service Mode

- Turn the power on. (Use main power on the TV unit.)
- Press [STANDBY/ON], [2], [7], [1], and [MUTE] buttons on the remote control unit in that order within 5 seconds. When entering the service mode, "4" will display at corners of the screen.
- During the service mode, electrical adjustment mode can be selected by remote control key.

Details are as follows.

Key	Adjustment Mode
MENU	Picture adjustment mode: Press the MENU button to change from BRT (Bright), *CNT (Contrast), *COL (Color), *TNT (Tint) and SHP (SHARP). Press P+/P- key to adjust Initial Value. *Marked items are not necessary to adjust normally.
◁ -	SECAM Black Level adjustment mode: See adjustment instructions page 1-6-4. Cut-Off adjustment mode: See adjustment instructions page 1-6-5. White Balance adjustment mode: See adjustment instructions page 1-6-6.
0	C-Trap adjustment mode: See adjustment instructions page 1-6-3.
1	DSPC adjustment mode: See adjustment instructions page 1-6-3.
2	H adjustment mode: See adjustment instructions page 1-6-2.
3	Head switching point adjustment mode (Auto adjustment): See adjustment instructions page 1-6-8.
4	Auto record mode: Perform recording (15 Sec.)-->Stop-->Rewind (Zero return) automatically.
5	Head switching point adjustment mode (Manual adjustment): See adjustment instructions page 1-6-8.

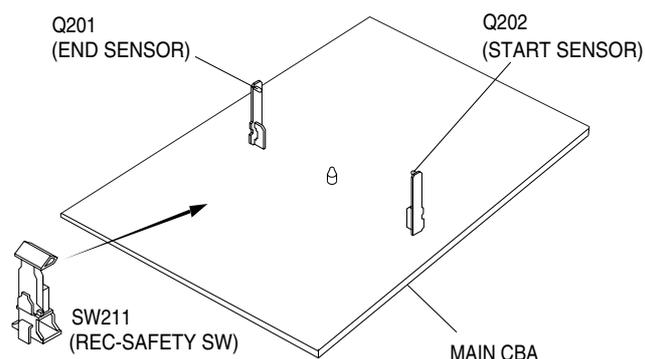
Key	Adjustment Mode
6	No need to use.
7	No need to use.
8	H. Shift adjustment mode: See adjustment instructions page 1-6-5.
9	V.size/V. shift adjustment: See adjustment instructions page 1-6-4.

Caution: 2

- The deck mechanism assembly is mounted on the Main CBA directly, and SW211 (REC-SAFETY SW) is mounted on the Main CBA. When deck mechanism assembly is removed from the Main CBA due to servicing, this switch can not be operated automatically.

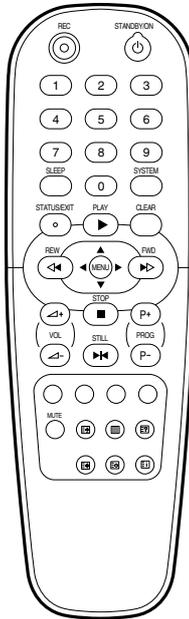
Preparing: 2

- To eject the tape, press the STOP/EJECT button on the unit (or Remote Control).
- When you want to record during the Service mode, press the Rec button while depressing SW211 (REC-SAFETY SW) on the Main CBA.



OPERATING CONTROLS AND FUNCTIONS

The remote control



REC To record the TV channel selected at this moment or press repeatedly to start a One-Touch Recording.

STANDBY/ON To switch off or on, interrupt menu function.

0..9 Press to select channels at TVCR.

SLEEP To select the switch-off time in 30 minutes intervals.

SYSTEM Doesn't work on these models. (21PV385/01,07)

To change Video (colour) system. (21PV385/39,58)

STATUS/EXIT To access or remove the TVCR's on-screen status display. To exit on-screen menus.

CLEAR To delete last entry. To clear a programmed recording (TIMER). To reset the elapsed time counter in the playback, recording or stop mode.

STILL To stop the tape and play back a picture step by step. (except for during fast forwarding and fast rewinding)

MENU To call up main menu of TVCR.

FWD When tape playback is stopped, press to fast forward the tape at high speed. During playback, press to fast forward the tape while the picture stays on the screen. To store or confirm entry in the menu. Press to adjust the controls of TVCR menu.

REW When tape playback is stopped, press to rewind the tape at high speed. During playback, press to rewind the tape while the picture stays on the screen. To return the cursor in the menu. Press to adjust the controls of TVCR menu.

PLAY To play back a tape, select an item in the menu of TVCR.

STOP To stop the tape, select an item in the menu of TVCR.

VOL+ **VOL-** To adjust the volume.

PROG P+ **PROG P-** To select the programme number. During playback, press to adjust the tracking.

MUTE To eliminate the TV's sound. Press again to restore the volume.

Red button/ Green button/ Yellow button/ Blue button/ Doesn't work on these models.

[21PV385]

Teletext: To switch Teletext on or off, or transparent mode.

Enlarge font

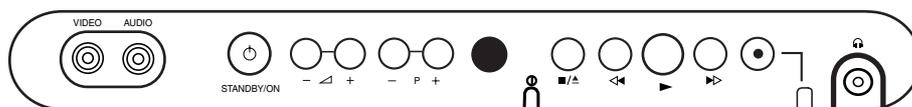
Select Teletext sub-page

Recall hidden information

Stop page changes

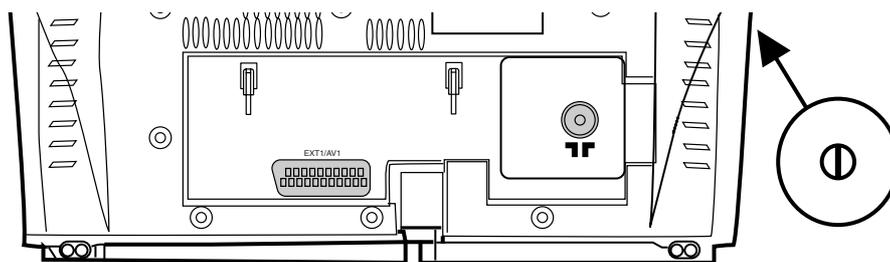
Go back to start page.

Front of your TVCR



-  **Standby/on:** To switch TVCR on or off, interrupt menu function.
-  **Volume:** In connection with the button ,  to adjust the volume.
-   **Programme number:** To select the programme number. During playback, press to adjust the tracking. To remove vertical jitter in a Still picture.
-  **Record:** To record the programme currently selected.
-  **Playback:** To play a recorded cassette.
-  **Pause/Stop, eject cassette:** To stop the tape; If this key is depressed while in STOP, the cassette is then ejected from the machine.
-  When tape playback is stopped, press to fast forward the tape at high speed.
-  When tape playback is stopped, press to rewind the tape at high speed.
-  **Sockets on the front:**
- White socket / AUDIO input socket:** To connect a camcorder or video game machine (audio).
- Yellow socket / VIDEO input socket:** To connect a camcorder or video game machine (video).
- Small socket / socket for headphones:** To connect headphones.

Back of your TVCR



-  **Aerial input socket:** To connect the aerial cable
-  **Scart socket:** To connect a satellite receiver, decoder, video recorder, etc
-  **Power switch:** To switch the TV-Video Combi off.

Caution: If you switch off using the power switch, TIMER-recordings are impossible!

The control lights at the front of machine

STANDBY ● **Standby light:** lights up when the TV-Video Combi has been switched on by means of the main switch.

RECORD ● **Recording light:** lights up during recording.

Fast blink: recording pause; timer recording not stand-by.

Slow blink: timer recording is stored in a timer block.

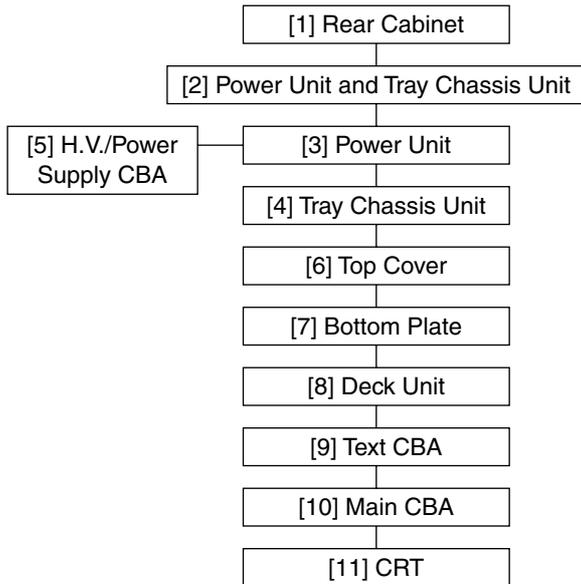
CABINET DISASSEMBLY INSTRUCTIONS

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 the steps in reverse order. Bend, route and dress the cables as they were.

Caution !!

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/ DESOLDER	Note
[8]	Deck Unit	3, 5	7(S-6), (S-7), (S-8), Desolder *(CN201, CL401, CL402, CL403)	7
[9]	Text CBA	3, 5	(S-9), Text Holder, *CN751, *CN752	8
[10]	Main CBA	3	4(S-10)	9
[11]	CRT	4	4(S-11)	10

↓ (1) ↓ (2) ↓ (3) ↓ (4) ↓ (5)

(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): Parts 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.

S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder

2(S-2) = two Screw (S-2)

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

Reference Notes in the Table

1. Removal of the Rear Cabinet.

Remove seven screws (S-1) and two screws (S-2). Disconnect connector CN151 and remove the Rear Cabinet.

Caution !!

Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

2. Removal of the Power Unit and Tray Chassis Unit.

Discharge the Anode Lead of the CRT with the CRT Ground before removing the Anode Cap. Disconnect the following: Anode Cap, CN501, CN551, CN601, CRT CBA, and Power Knob. Then pull the Power Unit and Tray Chassis Unit out backward.

3. Removal of the Power Unit.

Disconnect connectors CN502, CN552, and CN602. Then slide the Power Unit out.

4. Removal of the H.V./Power Supply CBA.

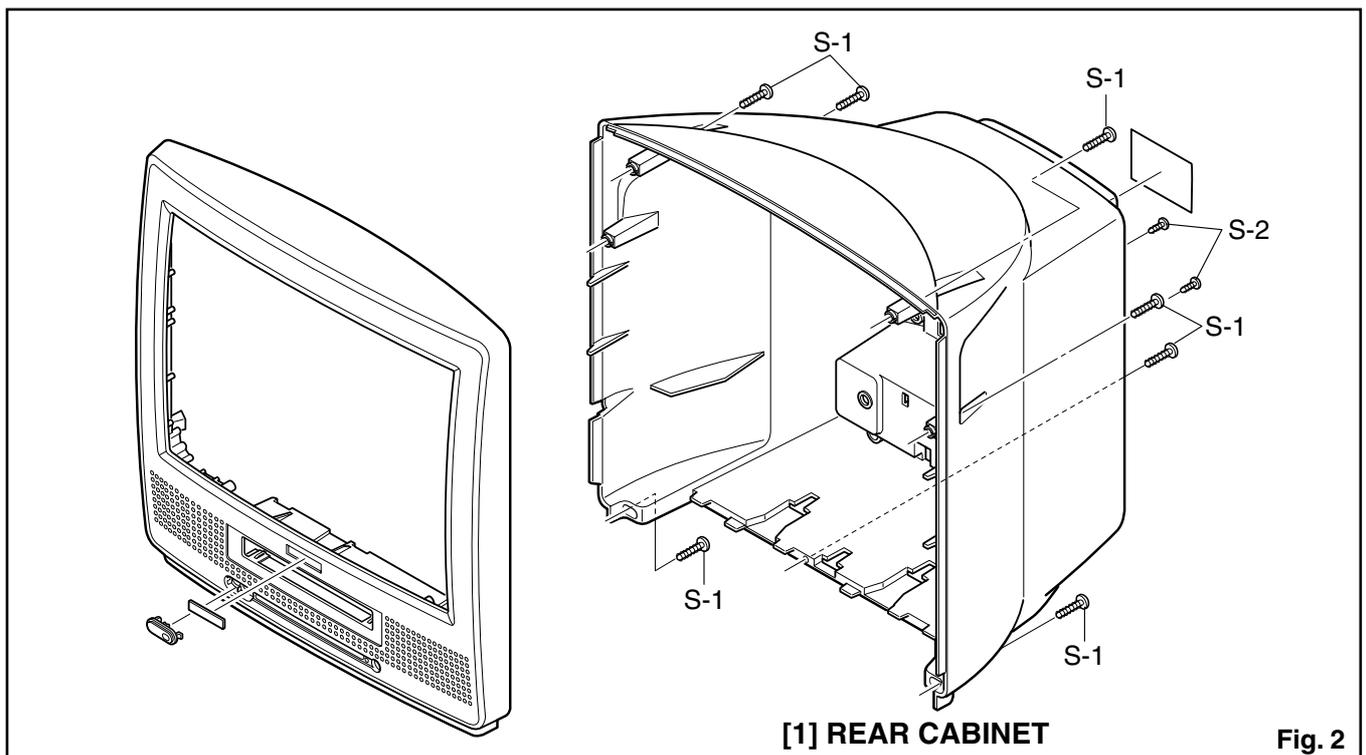
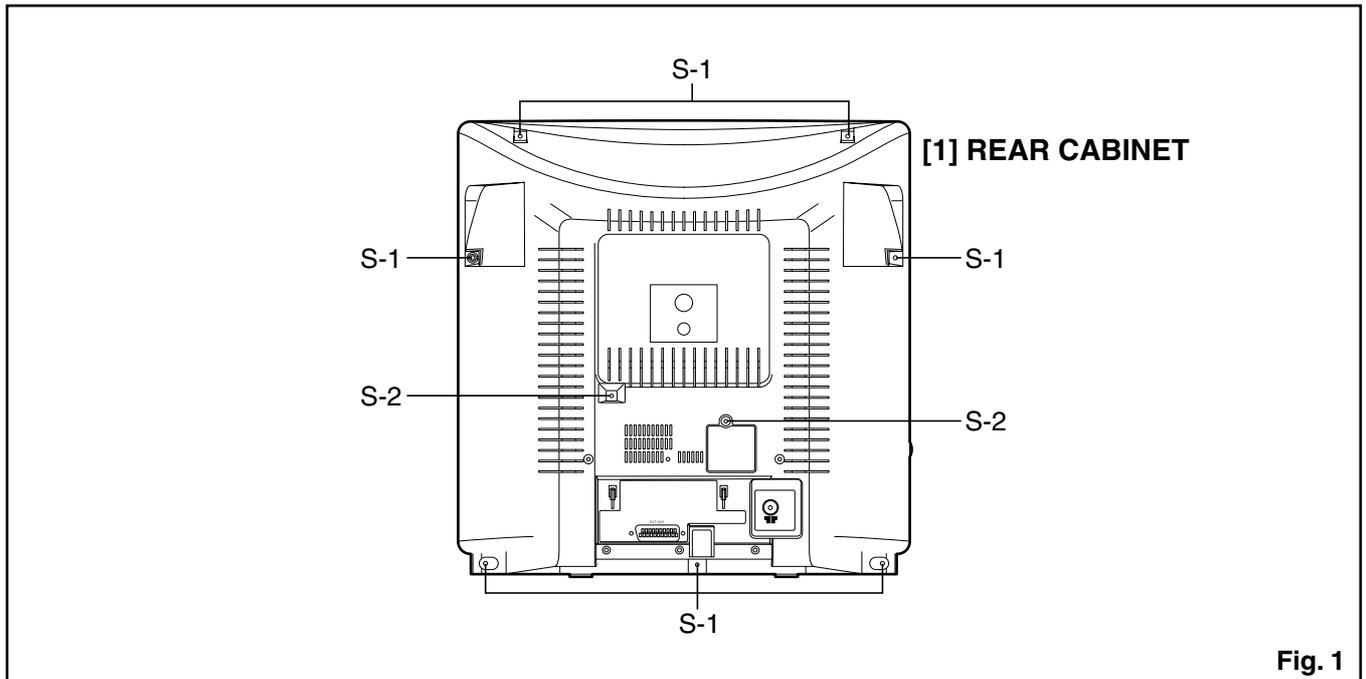
Remove six screws (S-3) and pull up the H.V./Power Supply CBA.

2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	1,2,5	7(S-1), 2(S-2), *CN151	1
[2]	Power Unit and Tray Chassis Unit	3,4,5	Anode Cap, *CN501, *CN551, *CN601, CRT CBA, Power Knob	2
[3]	Power Unit	3,5	*CN502, *CN552, *CN602	3
[4]	Tray Chassis Unit	3	-----	-
[5]	H.V./Power Supply CBA	3	6(S-3)	4
[6]	Top Cover	3	5(S-4), CL604	5
[7]	Bottom Plate	3	(S-5)	6

5. Removal of the Top Cover.
Remove five screws (S-4) and CL604, and remove the Top Shield.
6. Removal of the Bottom Plate.
Remove a screw (S-5). Then slide the Bottom Plate out front.
7. Removal of the Deck Unit.
Remove seven screws (S-6), screw (S-7) and screw (S-8). Then, desolder connectors (CN201, CL401, CL402, CL403) and lift up the Deck Unit.

8. Removal of the Text CBA.
Remove a screw (S-9) and Text Holder, and disconnect connectors CN751 and CN752. Then, lift the Text CBA up.
9. Removal of the Main CBA.
Remove four screws (S-10) and pull up the Main CBA.
10. Removal of the CRT.
Remove four screws (S-11) and pull the CRT backward.



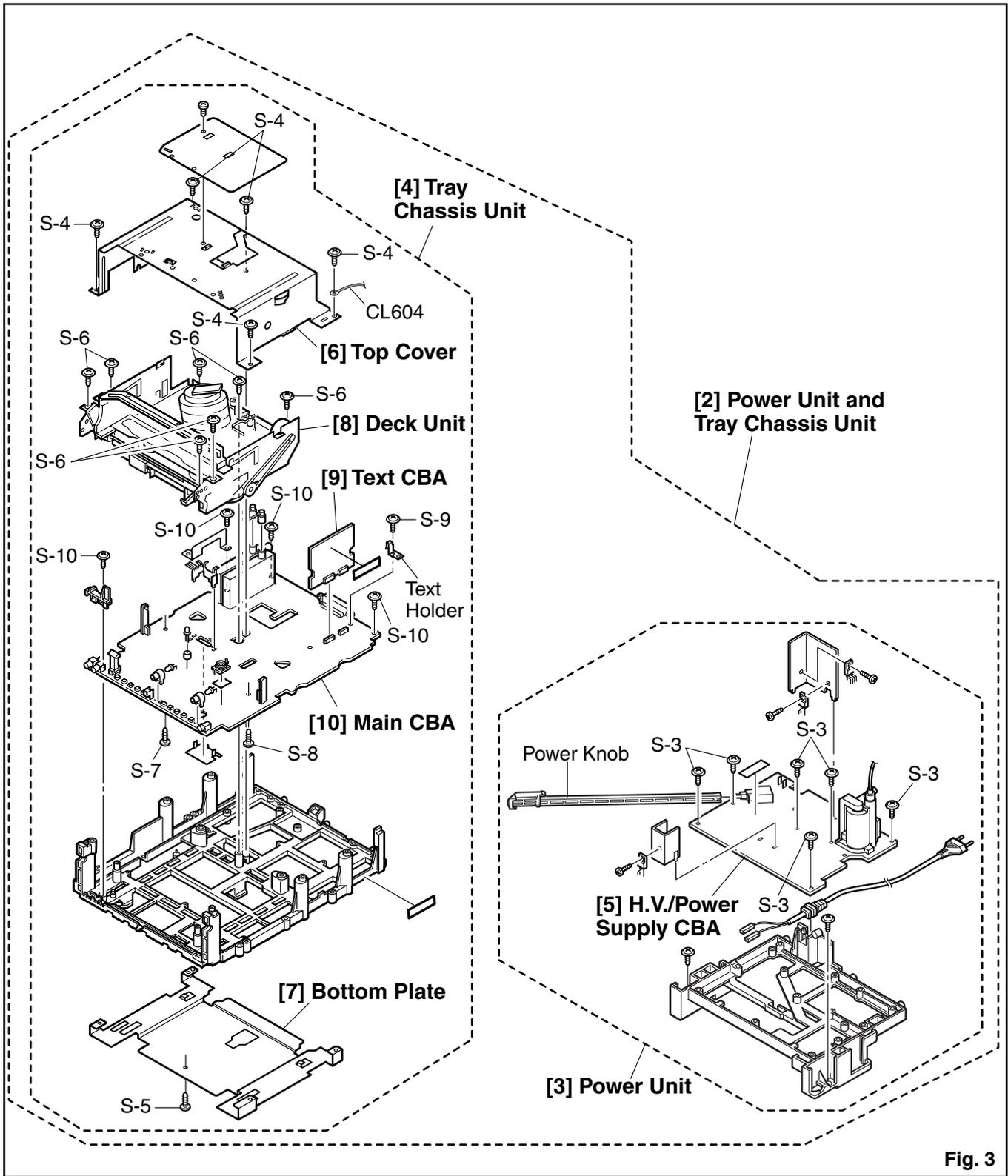


Fig. 3

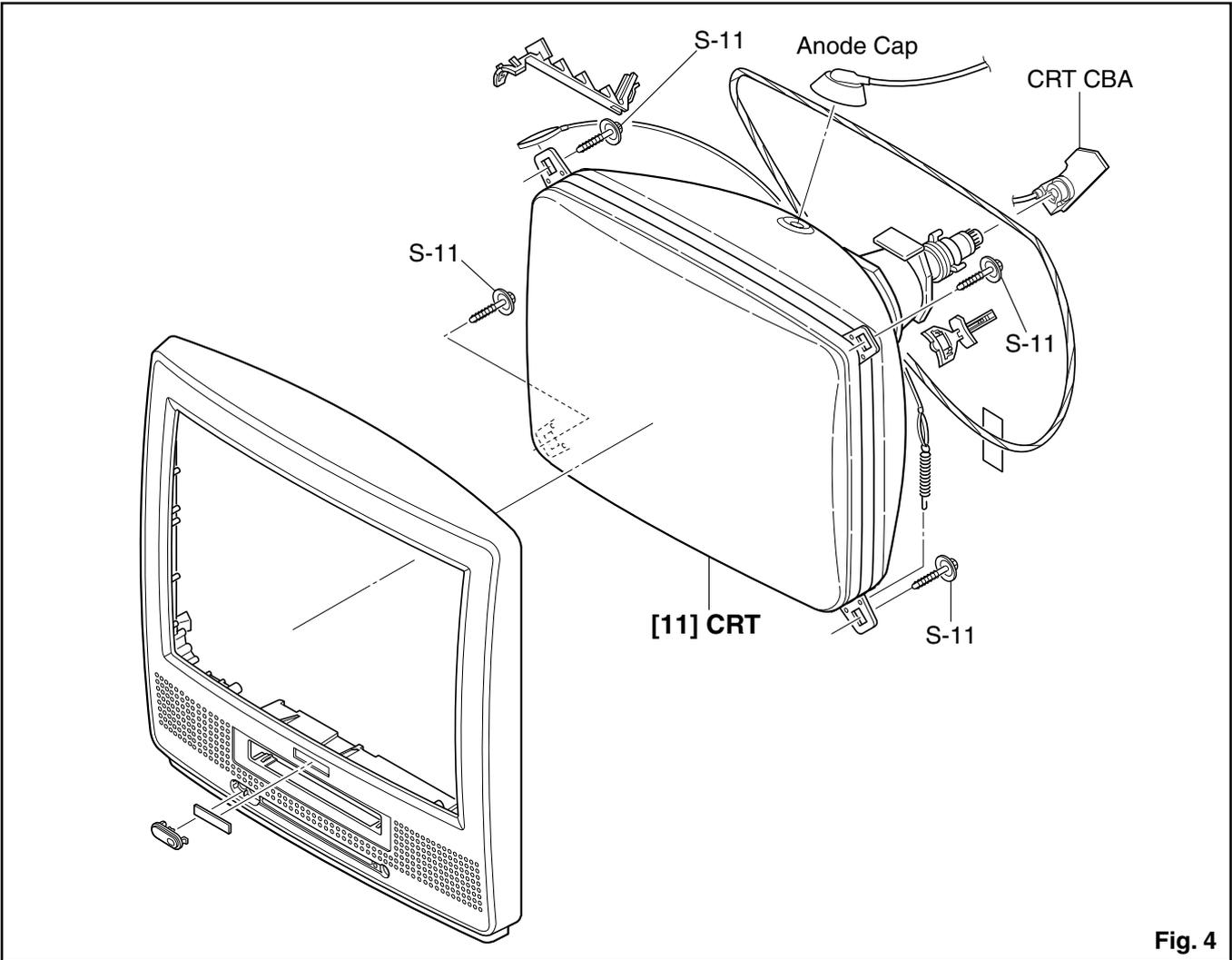


Fig. 4

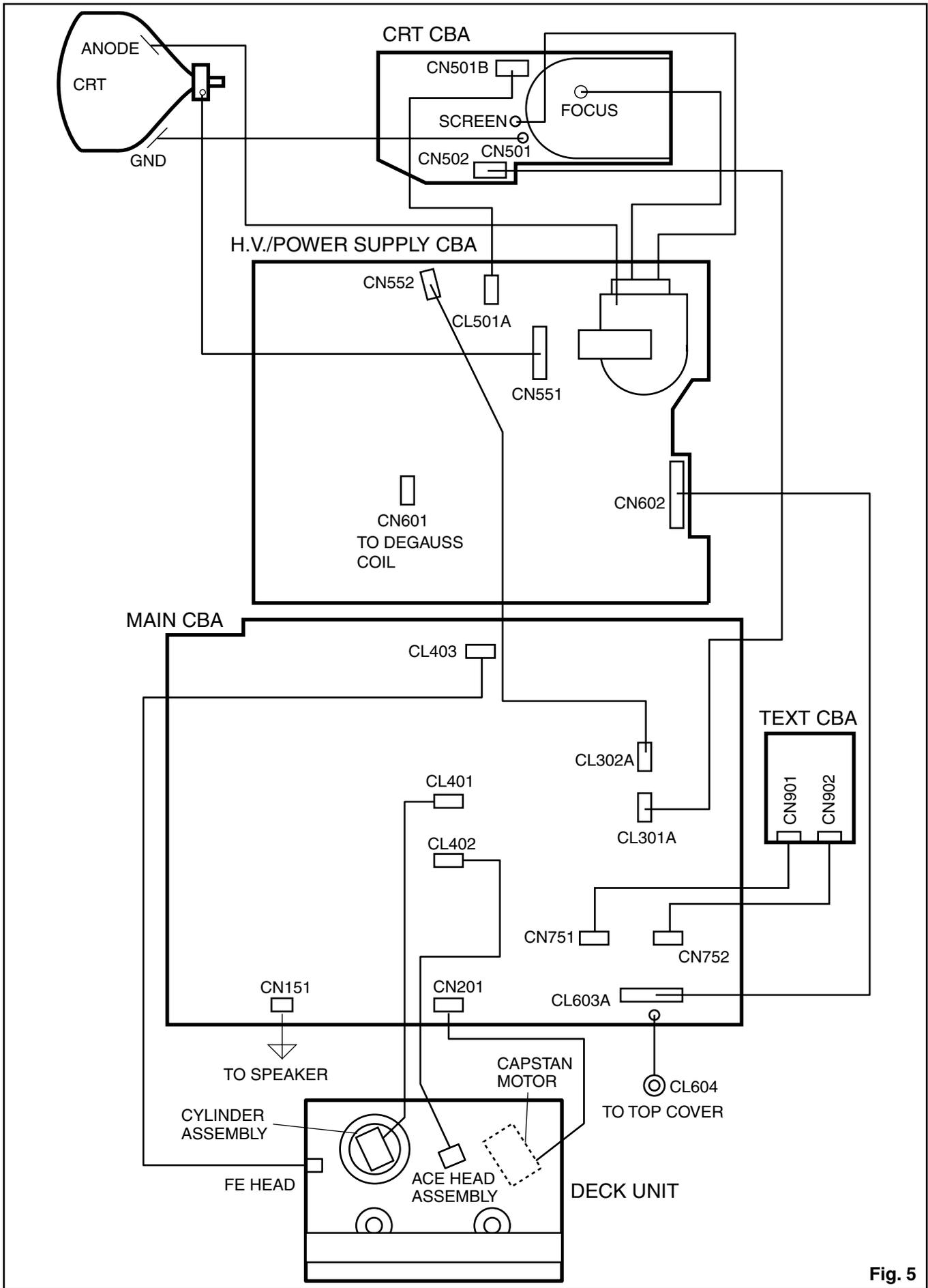


Fig. 5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

"CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

Electrical adjustments 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. PAL Pattern Generator (Color Bar, Monoscope, Black Raster, White Raster, Sympte)
2. SECAM Pattern Generator (Gray Scale)
3. AC Milli Voltmeter (RMS)
4. Alignment Tape (9965 000 14514), Blank Tape (E180)
5. DC Voltmeter
6. Oscilloscope: Dual-trace with 10:1 probe,
V-Range: 0.001~50V/Div,
F-Range: DC~AC-60MHz
7. Frequency Counter
8. Plastic Tip Driver
9. RF input (at each broadcasting system)
Receiving Channel : VHF Low
Input level : 80dB μ V
10. Ext.input
FRONT VIDEO-IN JACK or REAR SCART JACK

How to Set up the Service mode:

NOTE:

After replacing the IC202 (Memory) or Main CBA, the set value in IC202 (Memory) will be lost. So it is necessary to set up or adjust in the Service mode after its replacement.

Service Mode:

1. Turn the power on. (Use main power on the TV unit.)
 2. Press [STANDBY/ON], [2], [7], [1], and [MUTE] buttons on the remote control unit in that order within 5 seconds.
- To cancel the service mode, press [STANDBY/ON] button on the remote control.

How to set up the option code

1. Enter the Service mode.
2. Press the [STATUS/EXIT] button on the remote control unit. The option code appears on the display.
3. If needed, input the option code as shown below using number buttons on the remote control unit.

Model	Option Code
21PV385/07	0176
21PV385/01	0178
	0242
21PV385/58	0179
21PV385/39	0177

4. To reset the software, press [PAUSE] and [5] buttons on the remote control unit. The option code is changed.

1. DC114V (+B) Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
TP503 (+B), TP504 (GND)	VR601	RF (or Ext.)	Color Bar
Tape	M. EQ.	Spec.	
---	DC Voltmeter, Plastic Tip Driver	+114±0.5V DC	

Note: TP503(+B), TP504(GND), VR601 --- H.V./Power Supply CBA

1. Connect the unit to AC Power Outlet. (exact AC230V)
2. Input a color bar signal from RF (or Ext.) input and leave it for at least 20 minutes.
3. Connect DC Volt Meter to TP503(+B) and TP504(GND).
4. Adjust VR601 so that the voltage of TP503(+B) becomes +114±0.5V DC.

2. H Adjustment

Purpose: To get correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
R590	P+/P- buttons	Ext.	---
Tape	M. EQ.	Spec.	
---	Frequency Counter	15.625kHz±75Hz	

Note: R590 --- H.V./Power Supply CBA

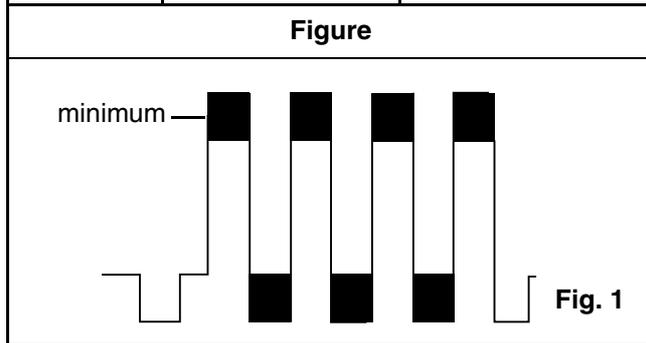
1. Connect Frequency Counter to R590.
2. Set the unit to the Ext. mode and no input is necessary. Enter the Service mode. (See page 1-6-10.)
3. Operate the unit for at least 20 minutes.
4. Press [2] button on the remote control unit and select H-Adj mode.
5. Press [P+/P-] buttons on the remote control unit so that the display will change [0] to [7.] At this moment, choose display [0] to [7] when the Frequency counter display is closest to 15.625kHz±75Hz.
6. Turn the power off and on again.

3. C-Trap Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If C-Trap Adjustment is incorrect, stripes will appear on the screen.

Test point	Adj. Point	Mode	Input
J349F3 (B-OUT)	P+/P- buttons	RF (or Ext.)	Color Bar
Tape	M. EQ.	Spec.	
---	Oscilloscope, Pattern Generator	200mVp-p Max.	



Note: J349F3 (B-Out)--- Main CBA

1. Connect Oscilloscope to J349F3.
2. Input a color bar signal from RF (or Ext.) input. Enter the Service mode. (See page 1-6-10.)
3. Press [0] button on the remote control unit and select C-TRAP mode.
4. Press [P+/P-] buttons on the remote control unit so that the carrier leakage B-Out (4.43MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

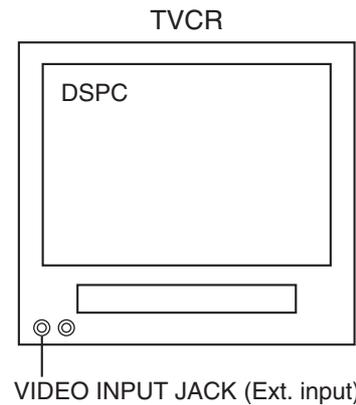
4. How to measure the standard V-ENV value of Digital Studio Picture Control

Purpose: To set the recording condition appropriate for the recording tape.

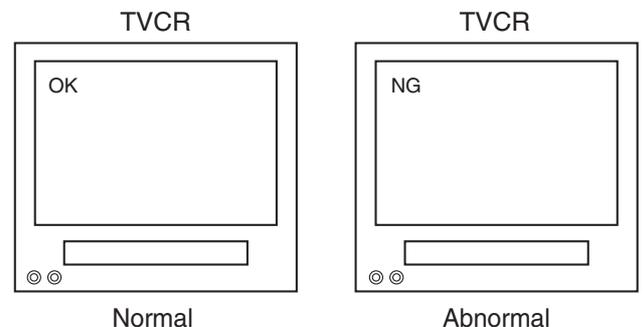
Symptom of Misadjustment: Recording or playing back picture quality may fall. The picture will be tinted.

1. Insert a new tape (type: E180) for the DSPC alignment into the TV/VCR.
2. Input the black raster signal from the video input jack (VIDEO-IN).
3. Enter the service mode. (See page 1-6-10.)

4. To enter the DSPC mode, press [1] button on the remote control unit. Recording starts automatically and "DSPC" appears on the display.



5. Recording continues for 10 seconds in SP mode. **Note:** Since the reference value of LP V-ENV is computed from the reference value of SP V-ENV, there is no need to survey it.
6. The tape is rewinded to the recording start point.
7. The unit enters the play mode automatically and the V-ENV levels of each the reference value of SP mode and the computing value of LP mode are memorized into the EEPROM.
8. "OK" or "NG" appears on upper left corner of the screen with blueback. In case of "OK": "OK" (green) is indicated without ejecting tape. In case of "NG": "NG" (red) is indicated with ejecting tape.



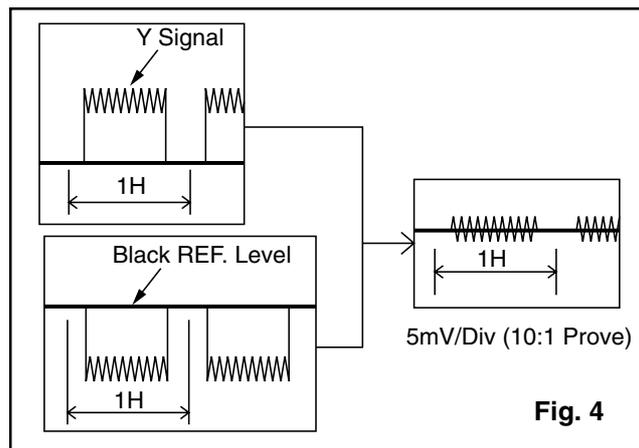
5. SECAM Black Level Adjustment

Purpose: To set Black Level of the SECAM signal R-Y/B-Y to Ref. level.

Symptom of Misadjustment: If Black Level of the SECAM signal R-Y/B-Y is incorrect, the picture is bluish or reddish in grayscale compared with PAL signal.

Test point	Adj. Point	Mode	Input
J361G4	P+/P- buttons	Ext.	SECAM Gray Scale
Tape	M. EQ.	Spec.	
---	Pattern Generator, Analog Oscilloscope (unusable Digital Oscilloscope)	---	

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Input the SECAM Gray Scale signal from Ext. input.
3. Enter the service mode. (See page 1-6-10.)
4. To enter the C/D/S mode, press [\triangle -] on the remote control unit.
5. To select SBR (SECAM Black Level R-Y), press [6] button on the remote control unit.
6. Press [P+/P-] buttons to adjust Y signal to the black ref. level.
7. To select SBB (SECAM Black Level B-Y), press [7] button on the remote control unit.
8. Press [P+/P-] buttons to adjust Y signal to the black ref. level.



6. V. Size Adjustment

Purpose: To obtain correct vertical height of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
Screen	P+/P- buttons	RF (or Ext.)	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-6-10.)
Press [9] button on the remote control unit and select V-S mode. (Press [9] button then display will change to V-P and V-S).
2. Input monoscope pattern and leave it for at least 20 minutes.
3. Press [P+/P-] buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

7. V. Shift Adjustment

Purpose: To obtain correct vertical position of screen image.

Symptom of Misadjustment: If V. position is incorrect, vertical position of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
Screen	P+/P- buttons	RF (or Ext.)	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-6-10.)
Press [9] button on the remote control unit and select V-P mode. (Press [9] button then display will change to V-P and V-S).
2. Input monoscope pattern and leave it for at least 20 minutes.
3. Press [P+/P-] buttons on the remote control unit so that the top and bottom of the monoscope pattern are equal to each other.

8. H. Shift Adjustment

Purpose: To obtain correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
Screen	P+/P- buttons	RF (or Ext.)	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-6-10.)
Press [8] button on the remote control unit and select H-P mode.
2. Input monoscope pattern and leave it for at least 20 minutes.
3. Press [P+/P-] buttons on the remote control unit so that the left and right side of the monoscope pattern are equal to each other.
4. Turn the power off and on again.

9. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test point	Adj. Point	Mode	Input
Screen	Screen-Control, P+/P- buttons	RF (or Ext.)	Black Raster
Tape	M. EQ.	Spec.	
---	Pattern Generator	See Reference Notes below	

Notes:

Screen Control (FBT) --- H.V./Power Supply CBA
FBT= Fly Back Transformer
Use the Remote Control Unit

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Set the screen control to minimum position. Input the Black raster signal from RF (or Ext.) input.
3. Enter the service mode. (See page 1-6-10.)
Dimmed horizontal line appears on the CRT.
4. To enter the C/D/S mode, press the [ -] button on the remote control unit.
5. To enter the CUT OFF (R) mode, press [1] button on the remote control unit.
6. Turn the screen control up until dimmed horizontal line appears.
7. Press the [P+/P-] buttons until the horizontal line becomes white.

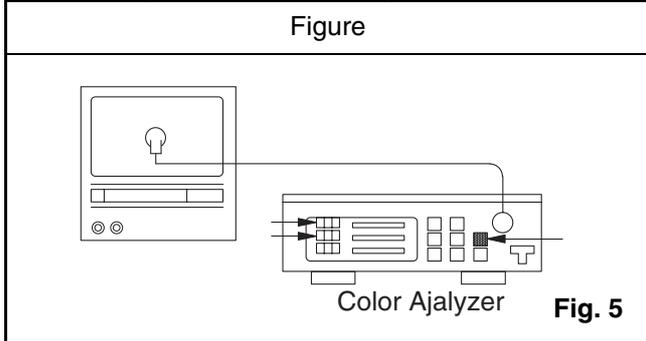
8. To enter the CUT OFF (G) mode, press [2] button on the remote control unit.
9. Press the [P+/P-] buttons until the horizontal line becomes white.
10. To enter the CUT OFF (B) mode, press [3] button on the remote control unit.
11. Press the [P+/P-] buttons until the horizontal line becomes white.
12. Turn the screen control so that the horizontal line adjusted white looks lightly.
13. Turn the power off and on again.

10. White Balance Adjustment

Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test point	Adj. Point	Mode	Input
Screen	Screen-Control, P+/P--buttons	RF (or Ext.)	White Raster (APL 100%)
Tape	M. EQ.	Spec.	
---	Pattern Generator, Color analyzer	See below	



Note: Use remote control unit

- Operate the unit more than 20 minutes.
- Face the unit to east. Degauss the CRT using Degaussing Coil.
- Input the White Raster (APL 100%).
- Set the color analyzer to the CHROMA mode and after zero point calibration, bring the optical receptor to the center on the tube surface (CRT).
- Enter the Service mode. Press [\triangle -] button on the remote control.
- Press [4] button on the remote control unit for Red adjustment. Press [5] button on the remote control unit for Blue adjustment.
- In each color mode, Press [P+/P--] buttons to adjust the values of color.
- Adjusting Red and Blue color so that the temperature becomes 8500K (x : 290 / y : 300) $\pm 3\%$.
- At this time, Re-check that Horizontal line is white. If not, Re-adjust Cut-off Adjustment until the Horizontal Line becomes pure white.
- Turn off and on again to return to normal mode. Receive APL 100% white signal and Check Chroma temperatures become 8500K (x : 290 / y : 300) $\pm 3\%$.

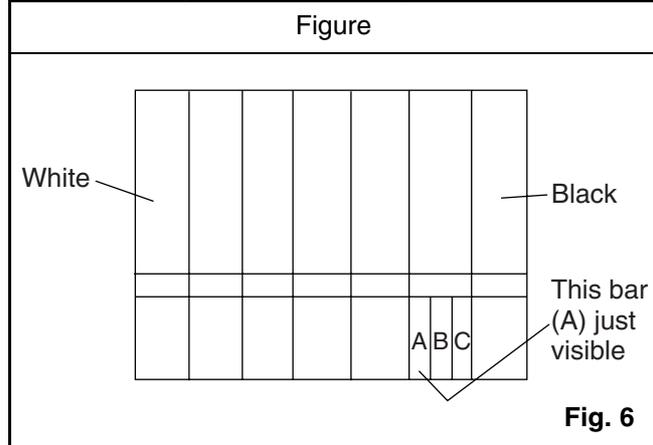
Note: Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

11. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

Test point	Adj. Point	Mode	Input
Screen	P+/P--buttons	RF (or Ext.)	SYMPTE
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below	



Note: Bar (A) in Fig. 7 --- 0 IRE

- Enter the service mode. (See page 1-6-10.) Then input SYMPTE signal from RF (or Ext.) input and leave it for at least 20 minutes.
- Press [MENU] button. (Each time [MENU] button is pressed, display will change BRT, CNT, COL, TNT, and SHP in that order.) Select BRT and press [P+/P--] buttons so that the bar (A) in Fig. 6 is just visible.
- Turn the power off and on again.

12. Setting for CONTRAST, COLOR, TINT and SHARP Data Values

General

1. Enter the Service mode. (See page 1-6-10)
2. Press [MENU] button. (Each time [MENU] button is pressed, display will change BRT, CNT, COL, TNT, and SHP in that order.)

CONTRAST (CNT)

1. Press [MENU] button on the remote control unit. Then select CNT display.
2. Press [P+/P-] buttons on the remote control unit so that the value of "CONTRAST" (CNT) becomes 83.

COLOR (COL)

1. Press [MENU] button on the remote control unit. Then select "COLOR" (COL) display.
2. Press [P+/P-] buttons on the remote control unit so that the value of "COLOR" (COL) becomes 65.

TINT (TNT)

1. Press [MENU] button on the remote control unit. Then select "TINT" (TNT) display.
2. Press [P+/P-] buttons on the remote control unit so that the value of "TINT" (TNT) becomes 68.

SHARP (SHP)

1. Press [MENU] button on the remote control unit. Then select "SHARP" (SHP) display.
2. Press [P+/P-] buttons on the remote control unit and select "0."

13. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test point	Adj. Point	Mode	Input
Screen	Focus Control	RF (or Ext.)	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	

Note: Focus VR (FBT) --- H.V./Power Supply CBA

FBT= Fly Back Transformer

1. Operate the unit more than 30 minutes.
2. Face the unit to the East and degauss the CRT using a Degaussing Coil.
3. Input the monoscope pattern.
4. Adjust the Focus Control on the FBT to obtain clear picture.

14. Head Switching Position Adjustment

Purpose: Determine the Head Switching Point during Playback.

Symptom of Misadjustment: May cause Head Switching Noise or Vertical Jitter in the picture.

Note: Unit reads Head Switching Position automatically and displays it on the screen (Upper Left Corner).

Manual Adjustment

1. Enter the service mode. (See page 1-6-10.)
2. Playback the test tape (9965 000 14514).
3. Press the number [5] button on the remote control unit.
4. The Head Switching position will display on the screen; if adjustment is necessary follow step 4. 7.0H (448 μ s) is preferable.
5. Press [P+/P-] buttons on the remote control unit if necessary. The value will be changed in 0.5H steps up or down. Adjustable range is up to 9.5H. If the value is beyond adjustable range, the display will change as:
Lower out of range: 0.0H
Upper out of range: -.-H
6. Turn the power off and on again.

Auto Adjustment

1. Load the test tape (9965 000 14514) that have been recorded the Head Switching Position Value.
2. Enter the service mode.
3. Press [3] button on the remote control unit in the tape stop mode. The unit playback and adjust the Head Switching Position automatically.
4. The adjusting report appears on upper left corner of the screen with blueback.
In case of adjusting correctly: the Head Switching Position Value recorded in the test tape (9965 000 14514) is indicated with green.
In case of adjusting incorrectly: "NG" (red) is indicated with ejecting tape.

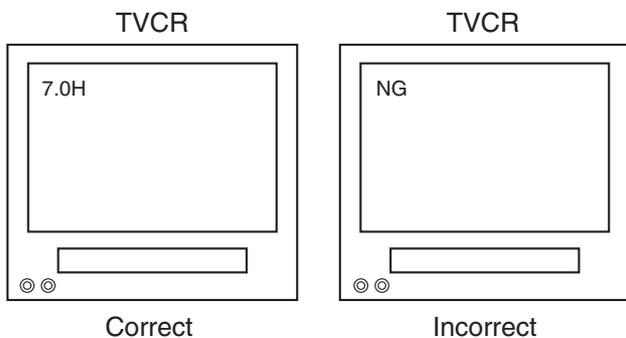
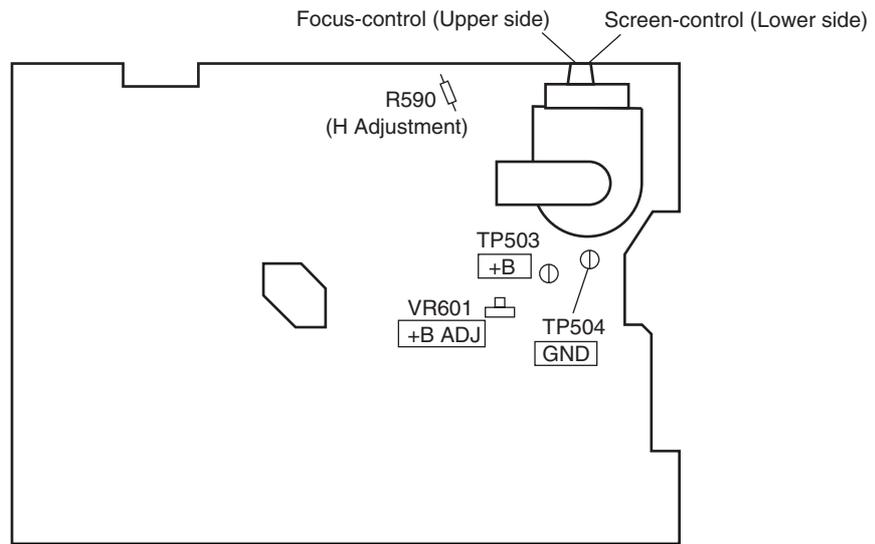


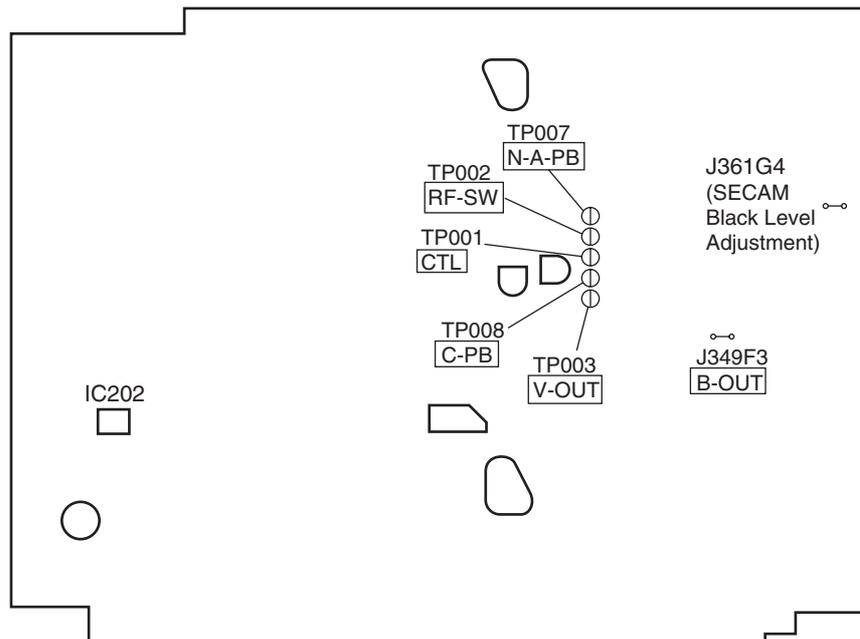
Fig. 7

Adjustment Points and Test Points

H.V./Power Supply CBA Top View



Main CBA Top View



TEST POINT INFORMATION

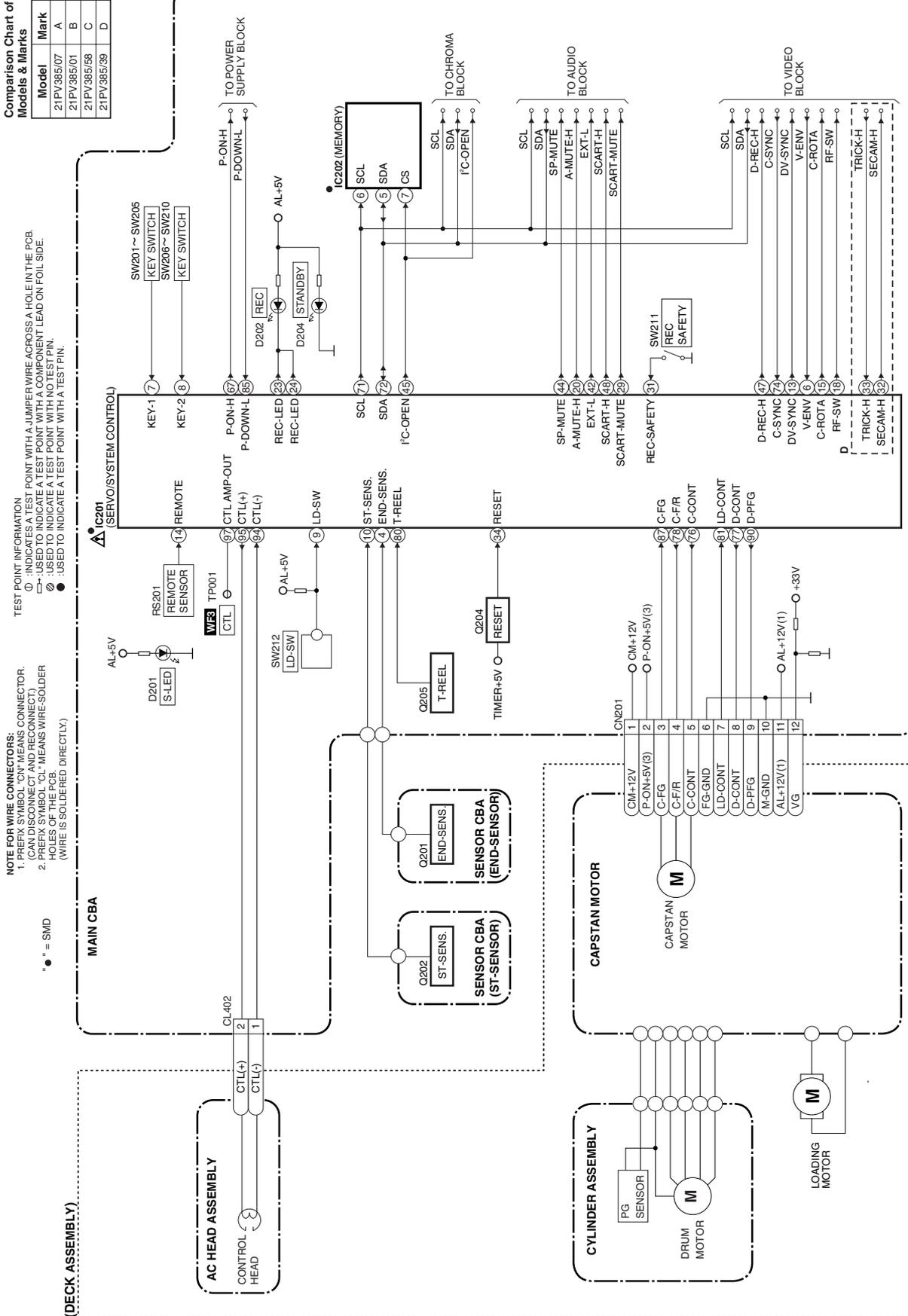
⊕: Indicates a test point with a jumper wire across a hole in the PCB.

TEST POINTS NOT USED IN ELECTRICAL ADJUSTMENTS

Test Point	Used in:	Page No.
TP001	Mechanical Alignment Procedures	2-3-3
TP002	Mechanical Alignment Procedures	2-3-3, 2-3-4
TP008	Mechanical Alignment Procedures	2-3-3, 2-3-4
TP503	Electrical Adjustment Instructions	1-6-1
TP504	Electrical Adjustment Instructions	1-6-1

BLOCK DIAGRAMS

Servo/System Control Block Diagram



Video Block Diagram

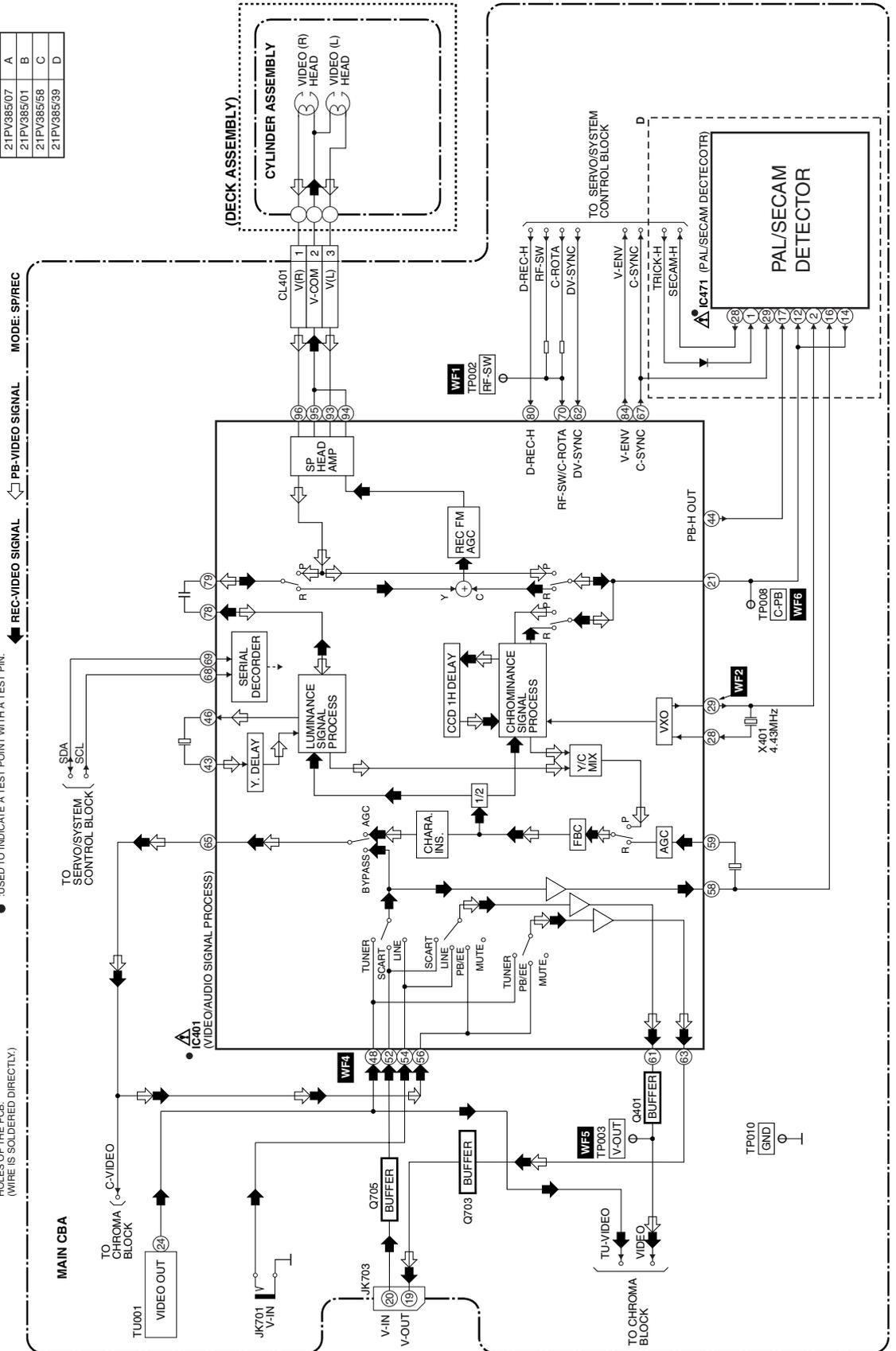
Comparison Chart of Models & Marks

Model	Mark
21PV385/07	A
21PV385/01	B
21PV385/68	C
21PV385/99	D

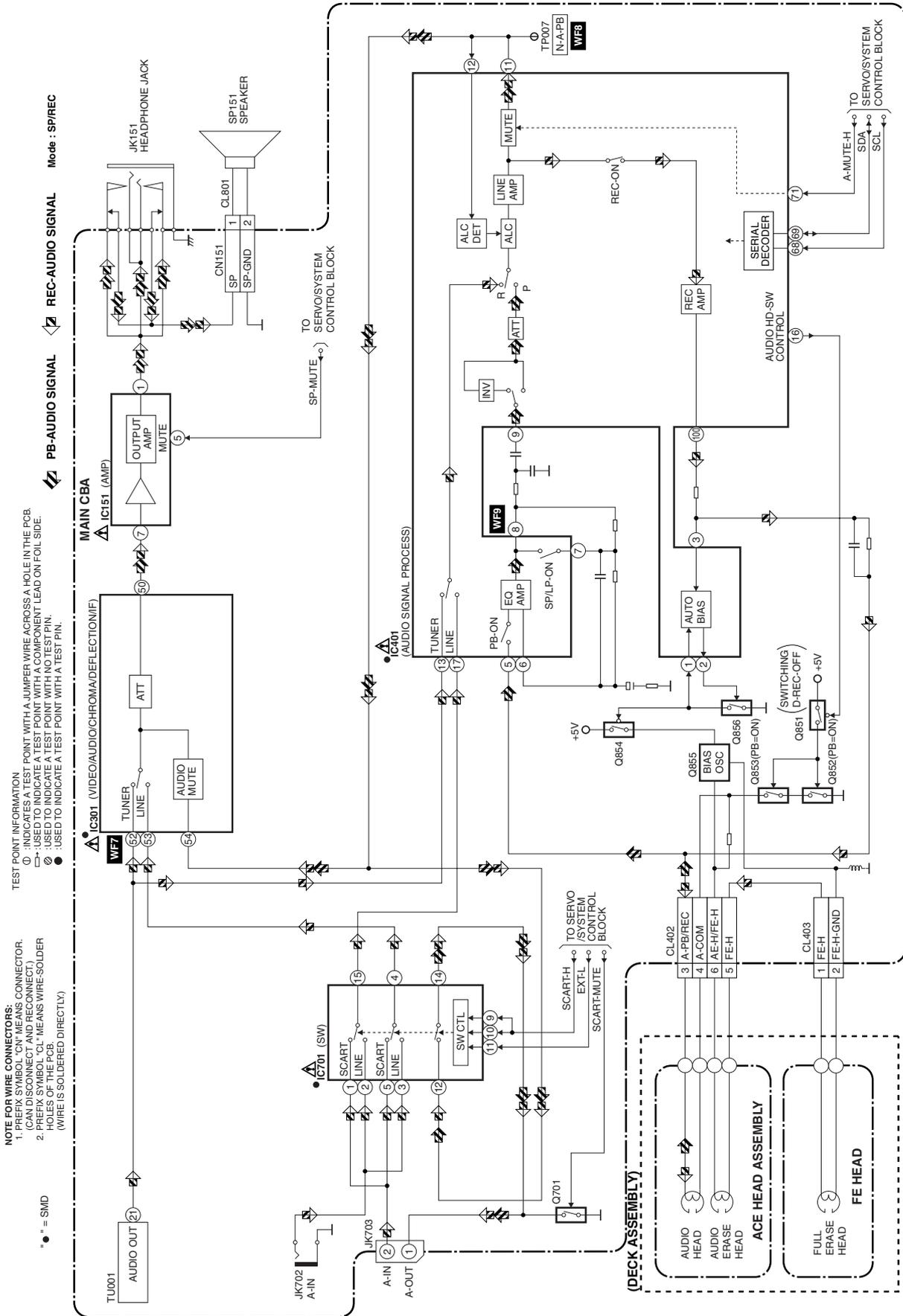
TEST POINT INFORMATION
 ○ INDICATES A TEST POINT WITH A JUMPER WIRE ACROSS A HOLE IN THE PCB.
 —○— USED TO INDICATE A TEST POINT WITH A COMPONENT LEAD ON FOL SIDE.
 —○— USED TO INDICATE A TEST POINT WITH NO TEST PIN.
 ● USED TO INDICATE A TEST POINT WITH A TEST PIN.

NOTE FOR WIRE CONNECTORS:
 1. PREFIX SYMBOL "CN" MEANS CONNECTOR (CAN DISCONNECT AND RECONNECT).
 2. PREFIX SYMBOL "CL" MEANS WIRE-SOLDER HOLES OF THE PCB (WIRE IS SOLDERED DIRECTLY).

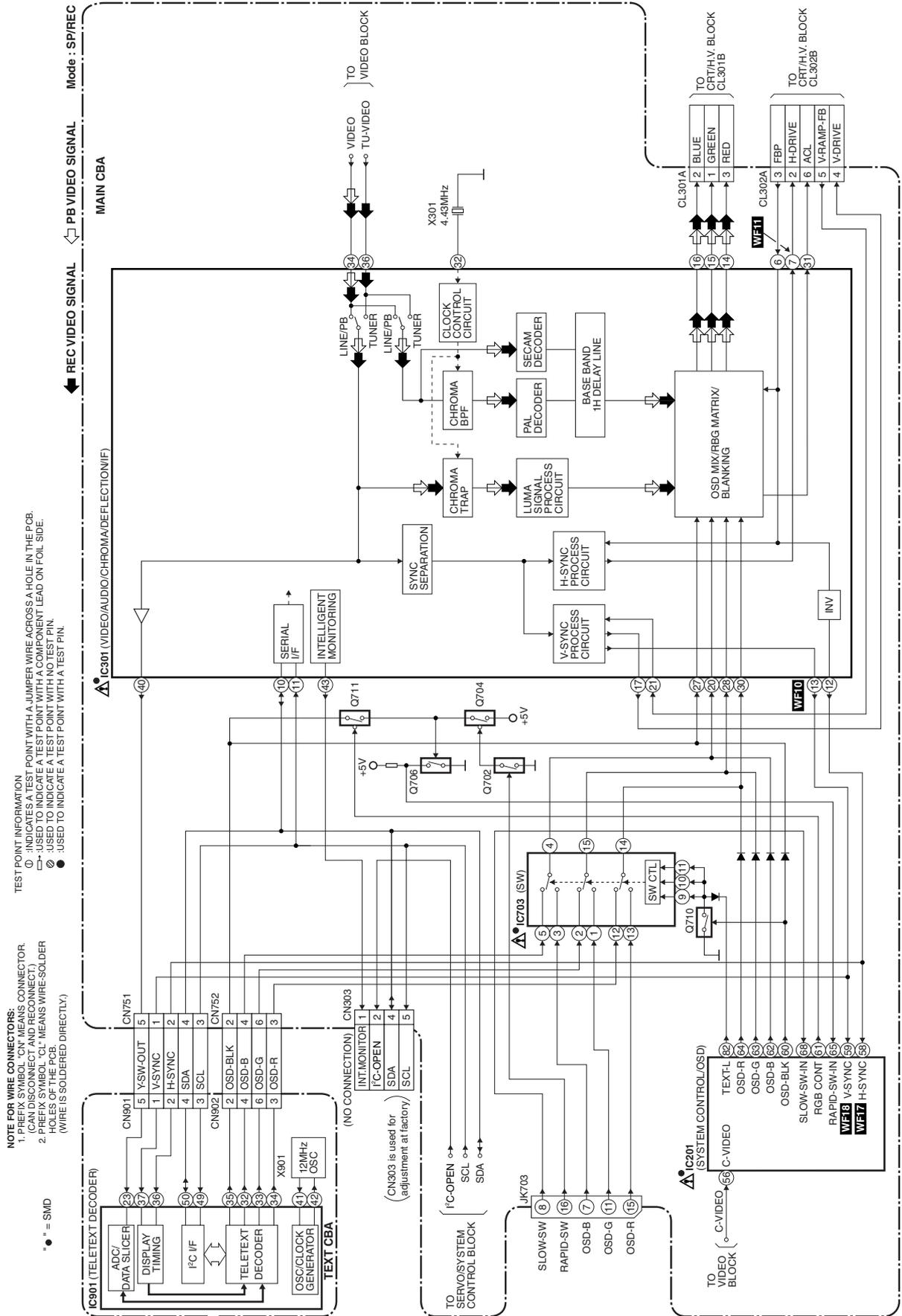
* = SMD



Audio Block Diagram



Chroma/Tuner Block Diagram

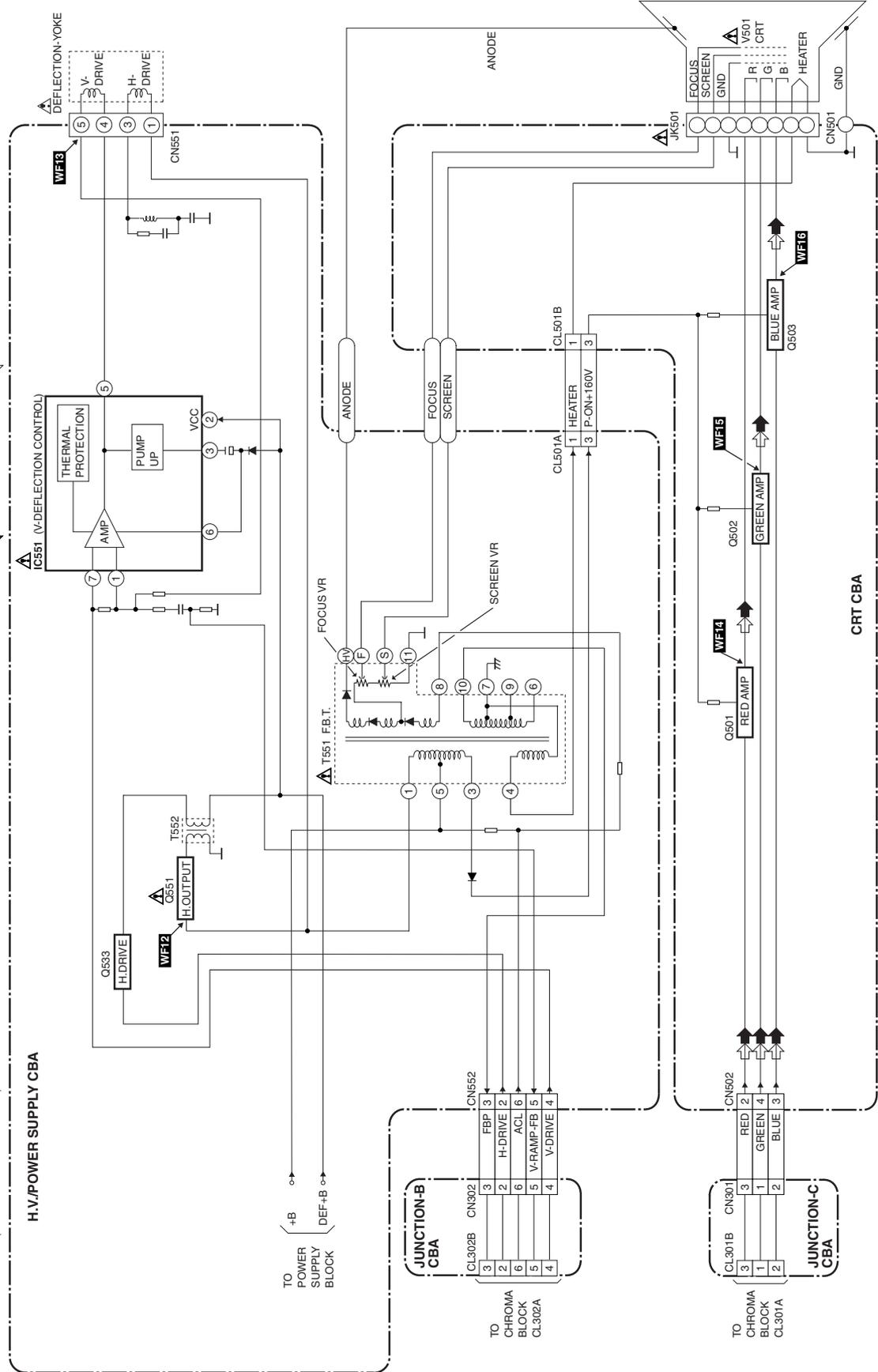


CRT/H.V. Block Diagram

NOTE FOR WIRE CONNECTORS:
 1. PREFIX SYMBOL "CN" MEANS CONNECTOR.
 2. PREFIX SYMBOL "CL" MEANS WIRE-SOLDER HOLES OF THE PCB.
 (WIRE IS SOLDERED DIRECTLY.)

TEST POINT INFORMATION
 (D) INDICATES A TEST POINT WITH A JUMPER WIRE ACROSS A HOLE IN THE PCB.
 (T) INDICATES A TEST POINT WITH A THERMAL PROTECTION LEAD ON FOIL SIDE.
 (S) USED TO INDICATE A TEST POINT WITH NO TEST PIN.
 (●) USED TO INDICATE A TEST POINT WITH A TEST PIN.

H.V./POWER SUPPLY CBA



Power Supply Block Diagram

NOTE:
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

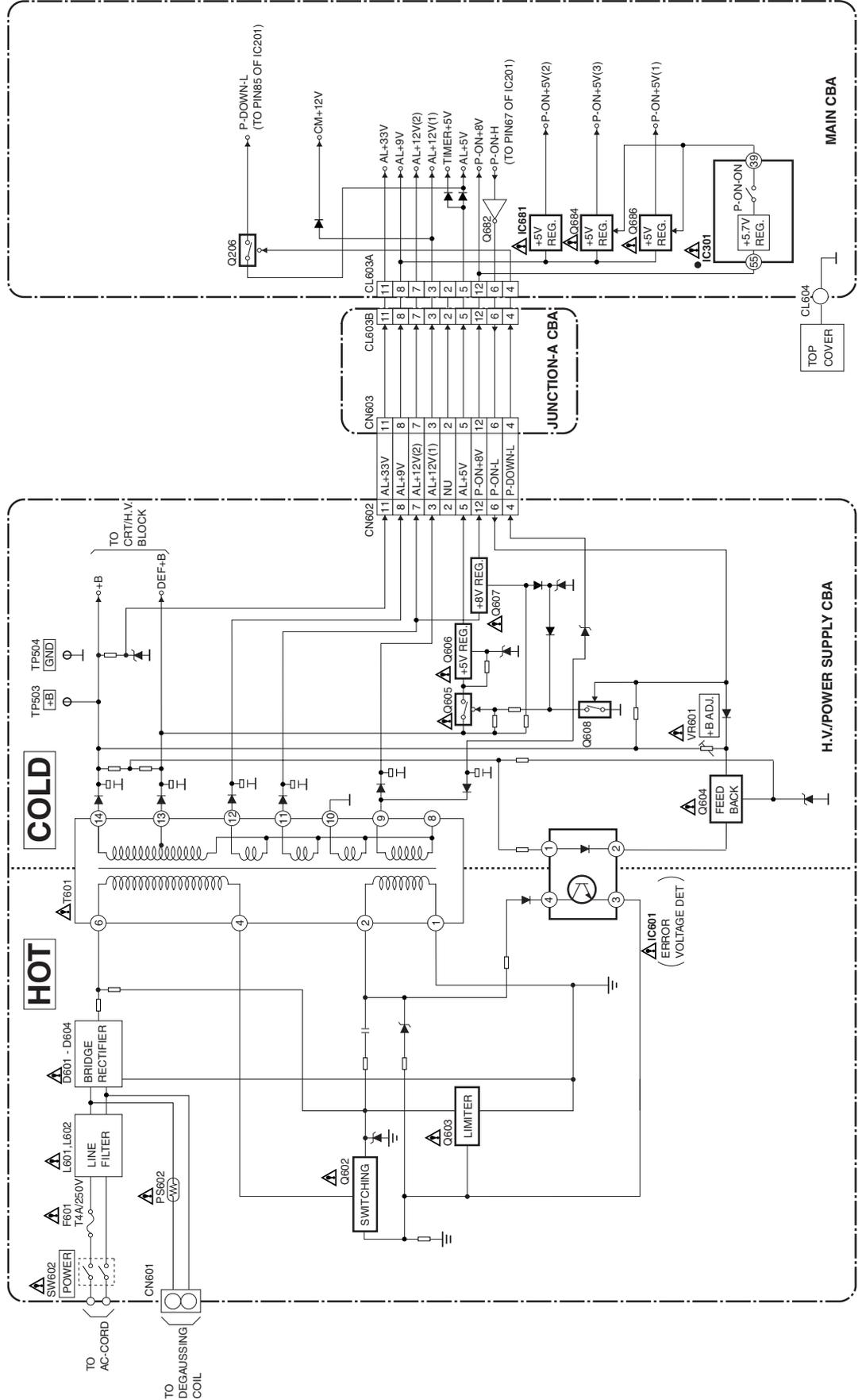
CAUTION!
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE T4A/250V FUSE.

NOTE FOR WIRE CONNECTORS:
1. PREFIX SYMBOL "CN" MEANS CONNECTOR. (CAN DISCONNECT AND RECONNECT).
2. PREFIX SYMBOL "CL" MEANS WIRE-SOLDER HOLES OF THE P.C.B. (WIRE IS SOLDERED DIRECTLY).

TEST POINT INFORMATION
○ .INDICATES A TEST POINT WITH A JUMPER WIRE ACROSS A HOLE IN THE P.C.B.
○ .INDICATES A TEST POINT WITH A JUMPER WIRE ACROSS A HOLE IN THE P.C.B. WITH A TEST POINT LEAD ON FOL SIDE.
⊙ .USED TO INDICATE A TEST POINT WITH NO TEST PIN.
● .USED TO INDICATE A TEST POINT WITH A TEST PIN.

* " = SMD



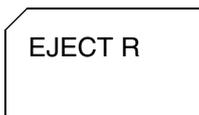
MECHANICAL TROUBLE INDICATOR

1, Each Malfunction Indication

If the MONITOR is turned ON right after the Mechanical Malfunction occurs or POWER SAFETY/X-RAY is turned ON, display the following character to show Malfunction after the EJECT display.

Immediately preceding Malfunction	Display character
REEL Malfunction	R
DRUM Malfunction	D
CASSETTE LOADING Malfunction	C
TAPE LOADING Malfunction	T
P-SAFETY 1	1
P-SAFETY 2	2
X-RAY	X

Example: If REEL Malfunction



2, Each Malfunction evaluation method

X-RAY protect

If X-RAY port becomes continuously 2.5V or more for 120 msec. (4 times 40 msec. interval), the unit shall immediately turn OFF the POWER/MONITOR and switch over to the Mechanical Malfunction mode with POWER OFF.

(To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

POWER SAFETY

1) POWER SAFETY 1

If P-SAFETY 1 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval) when MONITOR is ON, the unit shall be assumed to be the Power Malfunction 1 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

(To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

* However the POWER SAFETY 1 function shall be disabled during 500 msec. right after the MONITOR turns ON.

2) POWER SAFETY 2

If P-SAFETY 2 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval) when P-ON-H port is ON, the unit shall be assumed to be the Power Malfunction 2 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

(To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

* However the POWER SAFETY 2 function shall be disabled during 500 msec. right after the P-ON-H port turns ON.

Mechanical Malfunction determination

1) REEL Malfunction detection

Countermeasure for REEL and CAPSTAN motor rotation malfunction (Except CASSETTE LOADING function)

After the Malfunction detection with REEL/CAPSTAN sensor, the unit shall switch over to STOP (B) and be REEL Mechanical Malfunction.

- a) If the T-REEL pulse is not impressed after a lapse of 7 sec. at SP, 14 sec. at LP, or more in the REEL Rotation Mode like PLAY/REC, FS/RS Mode, and the T-REEL or S-REEL pulse is not impress after a lapse of 4 sec. or more in REEL Rotation Mode of FF/REW, it shall be assumed to stop the rotation and switch over to STOP (B) position, then POWER be turned OFF and the unit be REEL Mechanical Malfunction. (T-REEL and S-REEL for the models on S-REEL and only T-REEL for other models)
- b) If the C-FG pulse is not impressed for a lapse of 1 sec. or more during the CAPSTAN MOTOR rotation, it shall be MOTOR Rotation Malfunction (REEL Malfunction).

2) DRUM Malfunction detection

Detect the DRUM rotation at the D-FG input terminal.

If the variation of D-FG input level is not detected for a lapse of 1 sec. or more when D-CONT is "H", it shall be assumed to be Rotation Malfunction and be DRUM Malfunction.

When detect Drum Malfunction, POWER shall be turned OFF after the unit switches over to STOP (B) Mode.

3) Countermeasure for TAPE LOADING Malfunction

Detect the Malfunction with the LOADING Switch.

a) TAPE LOADING Malfunction

If LD-SW does not go to the established position after a lapse of 7 sec. or more from TAPE LOADING or TAPE UNLOADING start, the LOADING function shall immediately be stopped and POWER be turned OFF, and inform the Timer about the LOADING Mechanical Malfunction.

b) LD-SW Position Malfunction at each mode

When the unit operates at each mode, even if the LD-SW position changes from the established one in its mode, it keeps the function according to its mode.

4) Countermeasure for CASSETTE LOADING Malfunction

a) CASSETTE IN operating Malfunction

If LD-SW does not go to SB position after a lapse of 5 sec. or more from the CASSETTE insertion start, the unit starts the CASSETTE OUT operation.

After switch over to CASSETTE OUT operation and then a lapse of 5 sec. or more from the CASSETTE OUT operation start, if LD-SW does not go to the EJ position or if START Sensor and END Sensor does not turn "ON" at the EJ position, the unit starts again to insert CASSETTE.

(However in S-INH state, the START/END Sensor shall be disabled).

b) CASSETTE OUT operating Malfunction

After a lapse of 5 sec. or more from CASSETTE OUT operation start, if LD-SW does not go to the EJ position or if START Sensor and END Sensor does not turn "ON" at the EJ position, the unit starts to insert CASSETTE.

(However in S-INH state, the START/END Sensor shall be disabled).



When the unit switches over to CASSETTE insertion at CASSETTE IN or CASSETTE OUT Malfunction, if LD-SW does not go to the SB position after a lapse of 5 sec. or more from CASSETTE insertion start, the function shall immediately be stopped and POWER be turned OFF, and the unit be CASSETTE LOADING Malfunction.

c) When POWER is turned ON, if the CL position or GC position cannot be detected after 5 sec. LD-REV operation and 5 sec. LD-FWD operation, the function shall immediately be stopped and POWER be turned OFF, and the unit be CASSETTE LOADING Malfunction.

d) When POWER is turned ON without CASSETTE (EJ position) and LD-SW is monitored all the time, if the CL or GC position is detected continuously for 1 sec. or more, the POWER shall be turned OFF and the unit be CASSETTE LOADING Malfunction.

Countermeasure for Mechanical Malfunction

If the unit detects Mechanical Malfunction, turn the POWER OFF. If the unit is Mechanical Malfunction, Key input except POWER key shall be disabled and CASSETTE insertion disabled. When POWER Key is entered, the POWER is turned ON and the unit switches over the EJECT Mode. (Return with POWER ON)

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

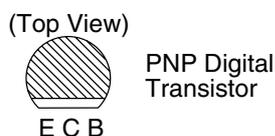
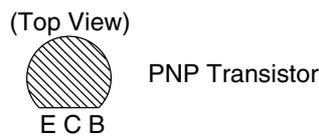
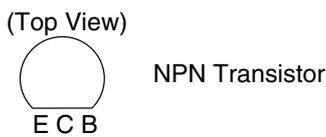
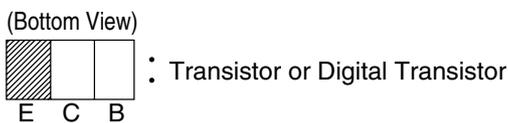
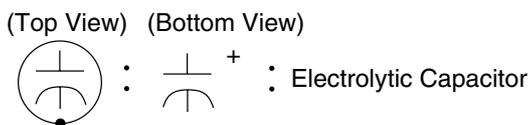
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special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

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
(Y)	±22.5%	20°C	-25~+85°C

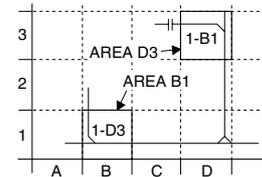
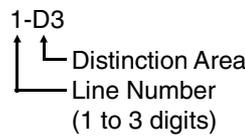
Capacitors and transistors are represented by the following symbols.

< PCB Symbols >



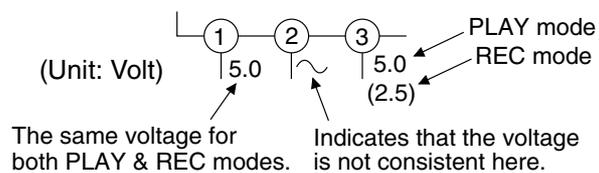
Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.
3. Prefix symbol "CN" means "connector" (can disconnect and reconnect).
Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).
4. How to read converged lines.

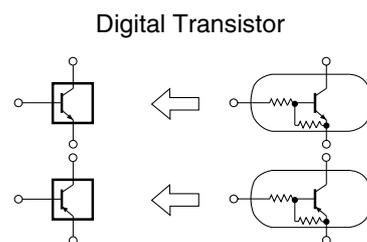


Examples:

- (1). "1-D3" means that line number "1" goes to area "D3."
 - (2). "1-B1" means that line number "1" goes to area "B1."
5. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
 6. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
 7. All capacitance values are indicated in μF ($P=10^{-6} \mu F$).
 8. All voltages are DC voltages unless otherwise specified.
 9. Voltage indications for PLAY and REC modes on the schematics are as shown below.



< Schematic Diagram Symbols >

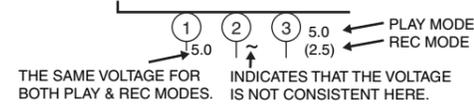


Main 1/5 Schematic Diagram Parts Location Guide

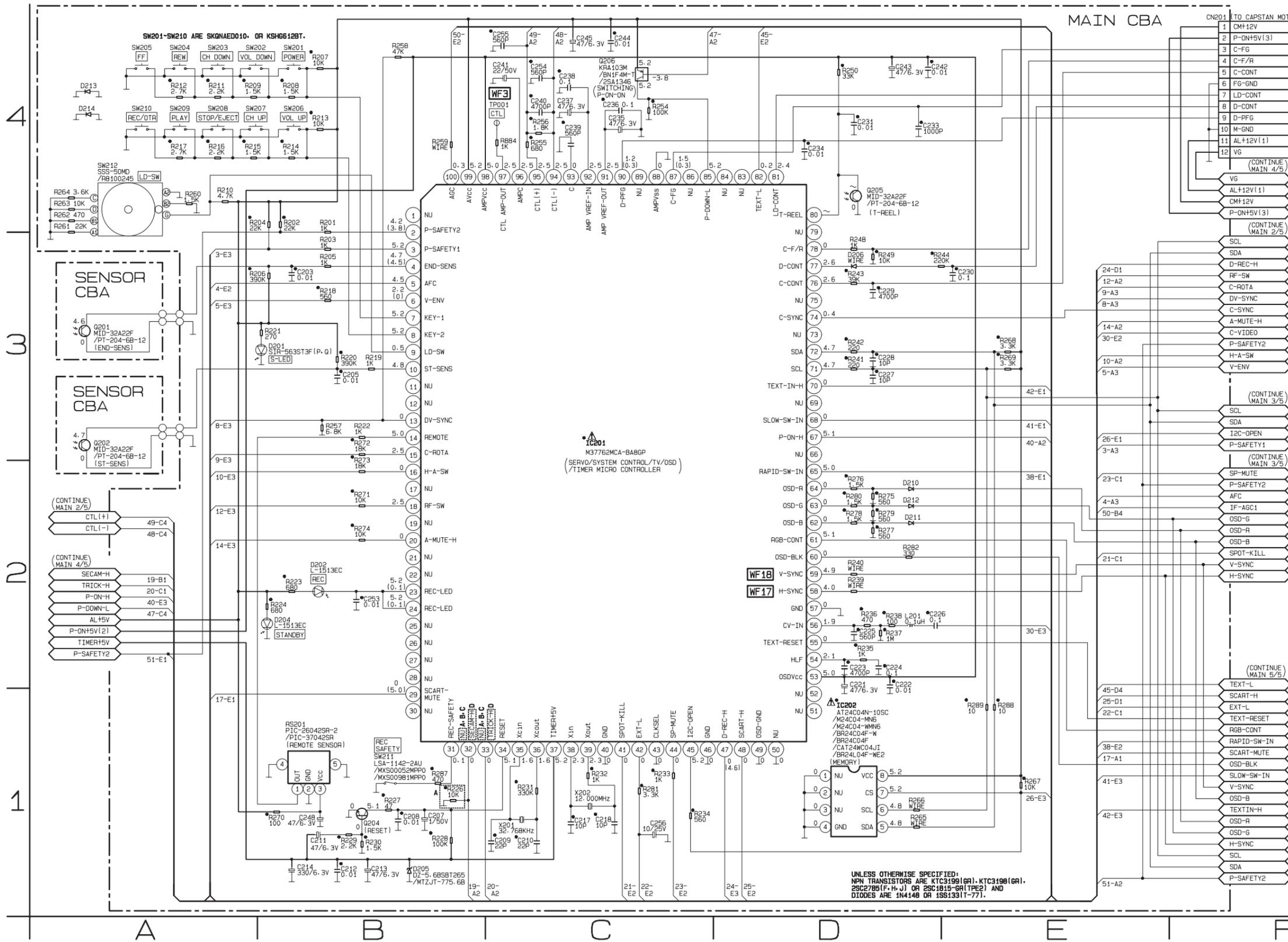
Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CONNECTOR		RESISTORS		RESISTORS	
C203	B-3	CN201	F-5	R220	B-3	R268	E-3
C205	B-3	DIODES		R221	B-3	R269	E-3
C207	B-1	D201	B-3	R222	B-3	R270	B-1
C208	B-1	D202	B-2	R223	B-2	R271	B-2
C209	C-1	D204	B-2	R224	B-2	R272	B-3
C210	C-1	D205	B-1	R226	B-1	R273	B-2
C211	B-1	D206	D-3	R227	B-1	R274	B-2
C212	B-1	D210	D-2	R228	B-1	R275	D-2
C213	B-1	D211	D-2	R229	B-1	R276	D-2
C214	B-1	D212	D-2	R230	B-1	R277	D-2
C217	C-1	D213	A-4	R231	C-1	R278	D-2
C218	C-1	D214	A-4	R232	C-1	R279	D-2
C221	D-2	ICS		R233	C-1	R280	D-2
C222	D-2	IC201	C-3	R234	C-1	R281	C-1
C223	D-2	IC202	D-1	R235	D-2	R282	D-2
C224	D-2	COIL		R236	D-2	R287	B-1
C225	D-2	L201	D-2	R237	D-2	R288	E-1
C226	D-2	TRANSISTORS		R238	D-2	R289	E-1
C227	D-3	Q204	B-1	R239	D-2	R884	C-4
C228	D-3	Q205	D-4	R240	D-2	SWITCHES	
C229	D-3	Q206	C-4	R241	D-3	SW201	B-4
C230	E-3	RESISTORS		R242	D-3	SW202	A-4
C231	D-4	R201	B-4	R243	D-3	SW203	A-4
C233	D-4	R202	B-4	R244	D-3	SW204	A-4
C234	D-4	R203	B-3	R248	D-3	SW205	A-4
C235	C-4	R204	B-4	R249	D-3	SW206	B-4
C236	C-4	R205	B-3	R250	D-3	SW207	A-4
C237	C-4	R206	B-3	R254	C-4	SW208	A-4
C238	C-4	R207	B-4	R255	C-4	SW209	A-4
C239	C-4	R208	B-4	R256	C-4	SW210	A-4
C240	C-4	R209	A-4	R257	B-3	SW211	B-1
C241	C-4	R210	A-4	R258	B-4	SW212	A-4
C242	D-4	R211	A-4	R259	B-4	TEST POINT	
C243	D-4	R212	A-4	R260	A-4	TP001	C-4
C244	C-4	R213	B-4	R261	A-4	CRYSTAL OSCILATORS	
C245	C-4	R214	B-4	R262	A-4	X201	C-1
C248	B-1	R215	A-4	R263	A-4	X202	C-1
C253	B-2	R216	A-4	R264	A-4	MISCELLANEOUS	
C254	C-4	R217	A-4	R265	D-1	RS201	B-1
C255	C-4	R218	B-3	R266	D-1		
C256	C-1	R219	B-3	R267	E-1		

Main 1/5 Schematic Diagram

Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



* = SMD



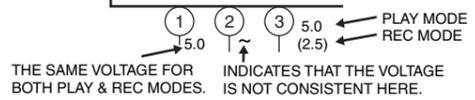
Comparison Chart of Models and Marks

MODEL	MARK
21PV385/07	A
21PV385/01	B
21PV385/58	C
21PV385/39	D

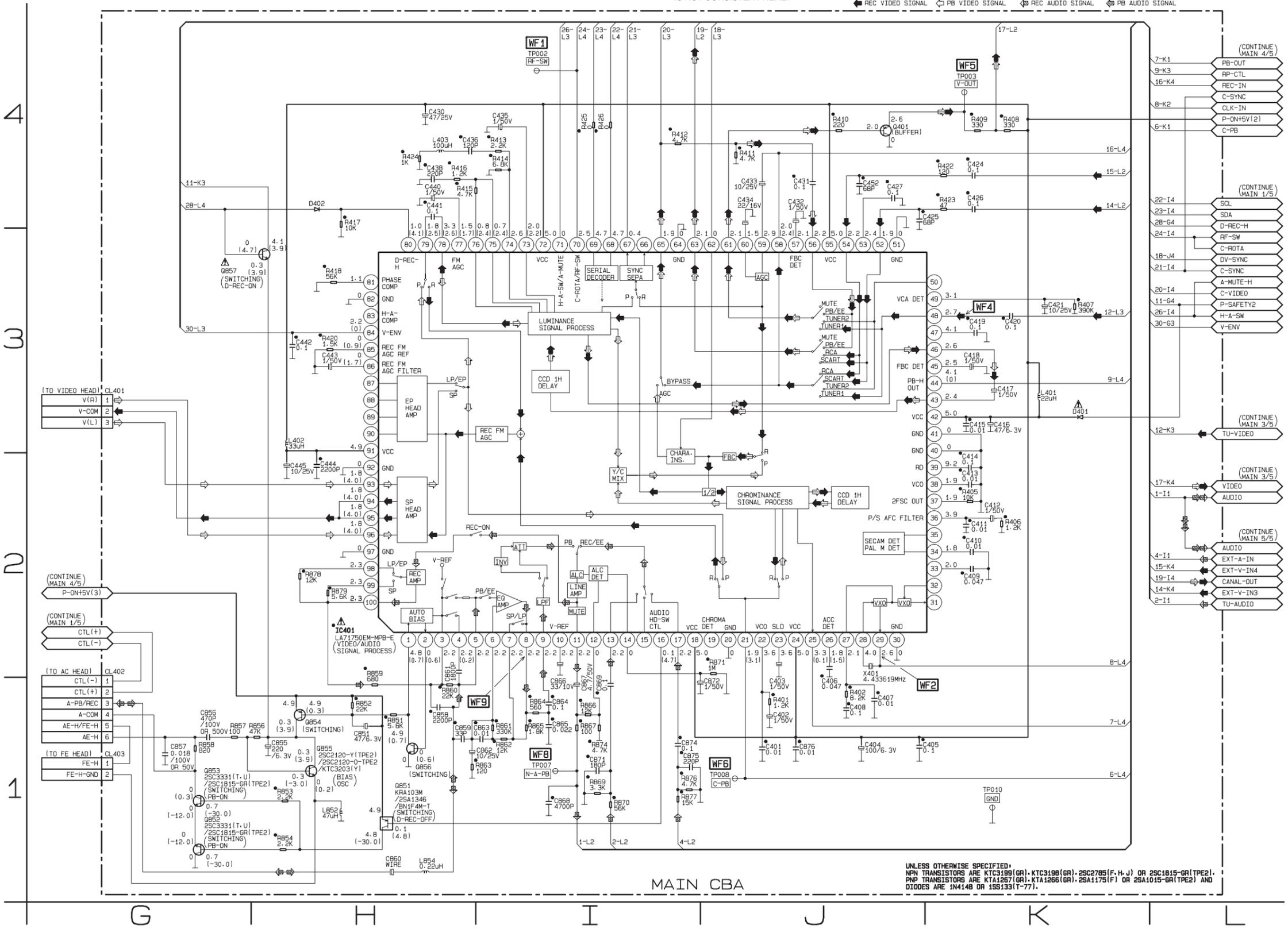
UNLESS OTHERWISE SPECIFIED:
NPN TRANSISTORS ARE KTC3199(16R1), KTC3198(16R1),
2SC2785(F, H, J) OR 2SC1815-GR(TPE2) AND
DIODES ARE 1N4148 OR 1SS133(1T-771).

Main 2/5 Schematic Diagram

Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



"•" = SMD



MAIN CBA

UNLESS OTHERWISE SPECIFIED:
 NPN TRANSISTORS ARE KTC3199(GR), KTC3198(GR), 2SC2785(F,H,J) OR 2SC1815-GR(TPE2).
 PNP TRANSISTORS ARE KTA1267(GR), KTA1266(GR), 2SA1175(F) OR 2SA1015-GR(TPE2) AND
 DIODES ARE 1N4148 OR 1S5133(T-77).

4

3

2

1

G H I J K L

Main 2/5 Schematic Diagram Parts Location Guide

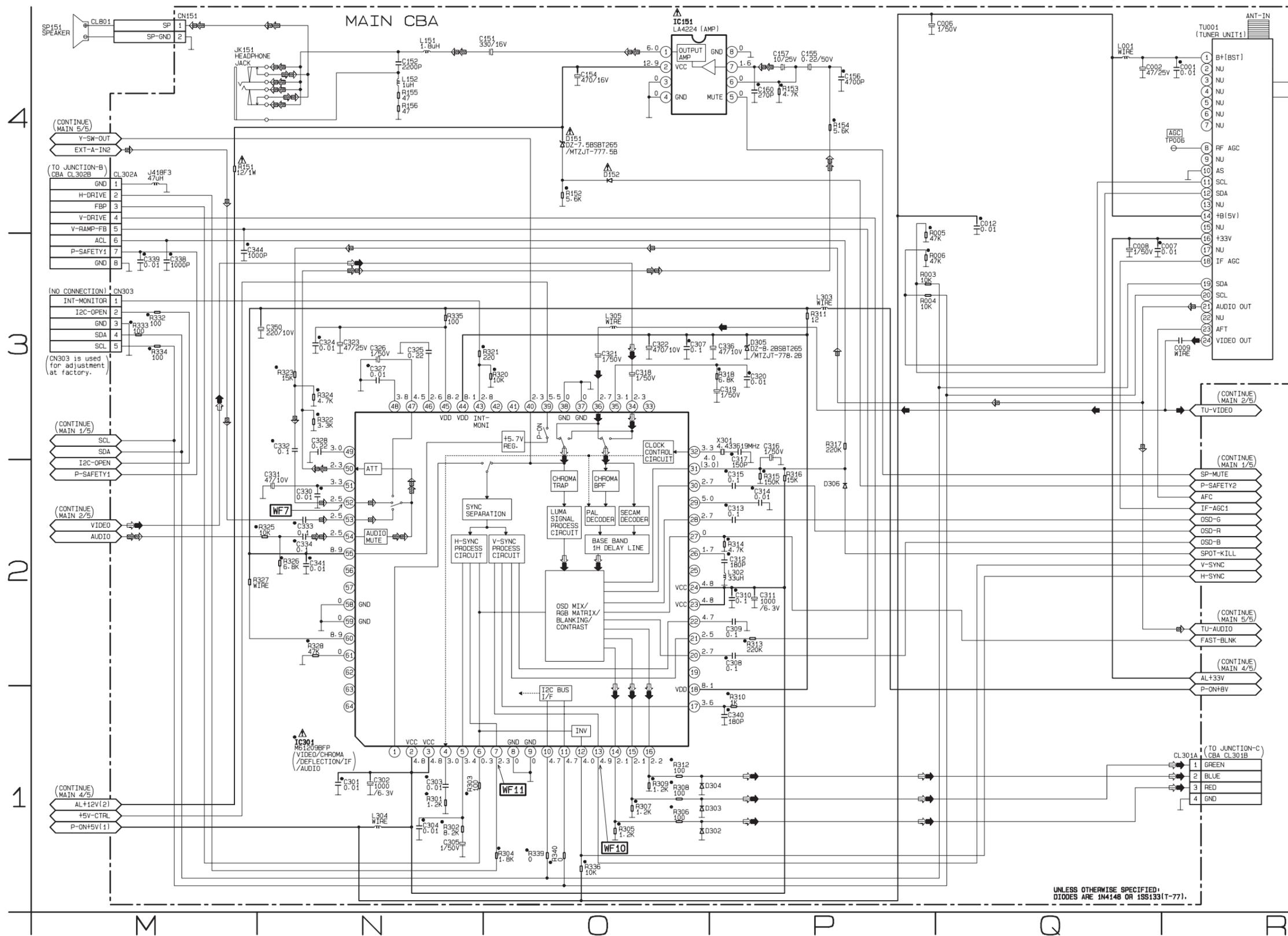
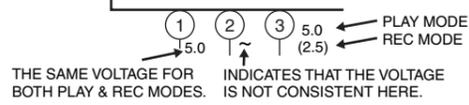
Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		COILS		RESISTORS	
C401	J-1	C443	H-3	L402	H-3	R851	H-1
C402	J-1	C444	H-2	L403	H-4	R852	H-1
C403	J-2	C445	H-2	L852	H-1	R853	H-1
C404	J-1	C452	J-4	L854	H-1	R854	H-1
C405	J-1	C851	H-1	TRANSISTORS		R856	H-1
C406	J-2	C855	H-1	Q401	J-4	R857	G-1
C407	J-1	C856	G-1	Q851	H-1	R858	G-1
C408	J-1	C857	G-1	Q852	G-1	R859	H-1
C409	K-2	C858	H-1	Q853	G-1	R860	H-1
C410	K-2	C859	H-1	Q854	H-1	R861	I-1
C411	K-2	C860	H-1	Q855	H-1	R862	I-1
C412	K-2	C861	H-2	Q856	H-1	R863	H-1
C413	K-2	C862	H-1	Q857	H-3	R864	I-1
C414	K-2	C863	I-1	RESISTORS		R865	I-1
C415	K-3	C864	I-1	R401	J-1	R866	I-1
C416	K-3	C865	I-1	R402	J-1	R867	I-1
C417	K-3	C866	I-2	R405	K-2	R869	I-1
C418	K-3	C867	I-1	R406	K-2	R870	I-1
C419	K-3	C868	I-1	R407	K-3	R871	J-2
C420	K-3	C869	I-1	R408	K-4	R874	I-1
C421	K-3	C871	I-1	R409	K-4	R876	I-1
C424	K-4	C872	J-1	R410	J-4	R877	I-1
C425	J-4	C874	I-1	R411	J-4	R878	H-2
C426	K-4	C875	I-1	R412	I-4	R879	H-2
C427	J-4	C876	J-1	R413	I-4	CRYSTAL OSCILATOR	
C430	H-4	CONNECTORS		R414	I-4	X401	J-2
C431	J-4	CL401	G-3	R415	H-4	TEST POINTS	
C432	J-4	CL402	G-1	R416	H-4	TP002	I-4
C433	J-4	CL403	G-1	R417	H-4	TP003	K-4
C434	J-4	DIODES		R418	H-3	TP007	I-1
C435	I-4	D401	K-3	R420	H-3	TP008	J-1
C436	H-4	D402	H-4	R422	K-4	TP010	K-1
C438	H-4	IC		R423	K-4		
C440	H-4	IC401	H-2	R424	H-4		
C441	H-4	COILS		R425	I-4		
C442	H-3	L401	K-3	R426	I-4		

Main 3/5 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		RESISTORS	
C001	R-4	C333	N-2	R156	N-4
C002	Q-4	C334	N-2	R301	N-1
C006	P-4	C336	P-3	R302	N-1
C007	Q-3	C338	M-3	R303	N-1
C008	Q-3	C339	M-3	R304	O-1
C009	R-3	C340	P-1	R305	O-1
C012	Q-4	C341	N-2	R306	O-1
C151	O-4	C344	M-3	R307	O-1
C152	N-4	C350	N-3	R308	O-1
C154	O-4	CONNECTORS		R309	O-1
C155	P-4	CL301A	R-1	R310	P-1
C156	P-4	CL302A	M-4	R311	P-3
C157	P-4	CN151	M-4	R312	O-1
C160	P-4	CN303	M-3	R313	P-2
C301	N-1	DIODES		R314	P-2
C302	N-1	D151	O-4	R315	P-2
C303	N-1	D152	O-4	R316	P-2
C304	N-1	D302	O-1	R317	P-3
C305	N-1	D303	O-1	R318	P-3
C307	O-3	D304	O-1	R320	O-3
C308	P-2	D305	P-3	R321	N-3
C309	P-2	D306	P-2	R322	N-3
C310	P-2	ICS		R323	N-3
C311	P-2	IC151	O-4	R324	N-3
C312	P-2	IC301	N-1	R325	N-2
C313	P-2	COILS		R326	N-2
C314	P-2	J418F3	M-4	R327	M-2
C315	P-2	L001	Q-4	R328	N-2
C316	P-3	L151	N-4	R332	M-3
C317	P-3	L152	N-4	R333	M-3
C318	O-3	L302	P-2	R334	M-3
C319	P-3	L303	P-3	R335	N-3
C320	P-3	L304	N-1	R336	O-1
C321	O-3	L305	O-4	R339	O-1
C322	O-3	RESISTORS		R340	O-1
C323	N-3	R003	P-3	CRYSTAL OSCILATOR	
C324	N-3	R004	P-3	X301	P-3
C325	N-3	R005	P-3	MISCELLANEOUS	
C326	N-3	R006	P-3	JK151	M-4
C327	N-3	R151	M-4	TU001	R-4
C328	N-3	R152	O-4	TEST POINT	
C330	N-2	R153	P-4	TP006	R-4
C331	N-2	R154	P-4		
C332	N-3	R155	N-4		

Main 3/5 Schematic Diagram

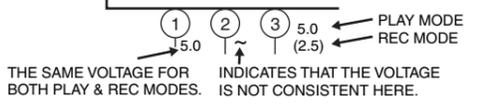
Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



UNLESS OTHERWISE SPECIFIED: DIODES ARE 1N4148 OR 1SS133(T-77).

Main 4/5 Schematic Diagram

Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:

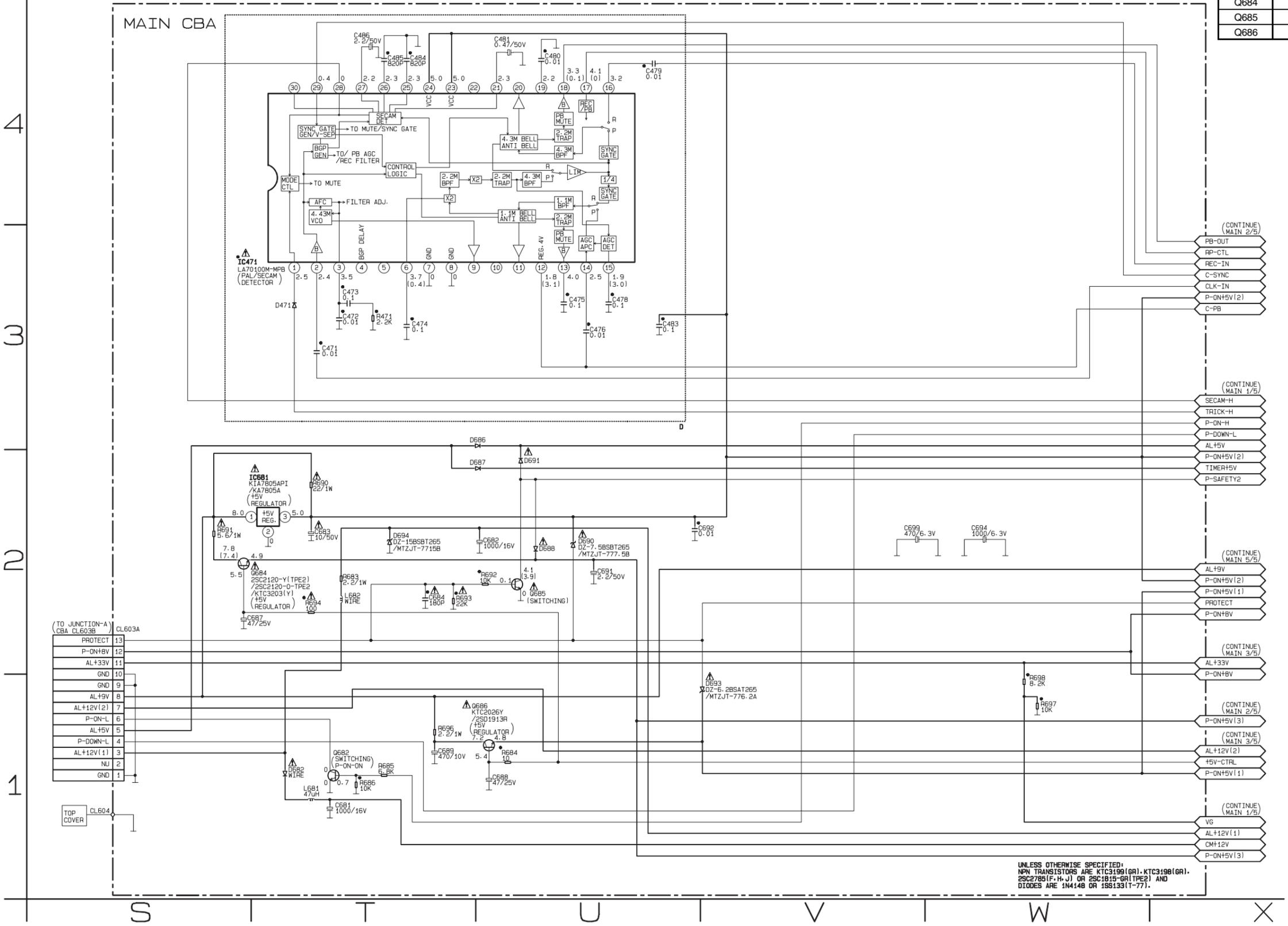


VOLTAGE CHART (Power off mode)

Ref. No.	1	2	3
IC681	3.2	0	1.9
Ref. No.	E	C	B
Q682	0	7.9	0
Q684	0.1	3.1	0
Q685	0	0.6	0
Q686	0	3.1	0

Comparison Chart of Models and Marks

MODEL	MARK
21PV385/07	A
21PV385/01	B
21PV385/58	C
21PV385/39	D



Main 4/5 Schematic Diagram Parts Location Guide

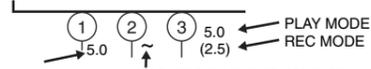
Ref No.	Position	Ref No.	Position
CAPACITORS		DIODES	
C471	T-3	D687	U-2
C472	T-3	D688	U-2
C473	T-3	D690	U-2
C474	T-3	D691	U-2
C475	U-3	D693	V-1
C476	U-3	D694	T-2
C478	U-3	ICS	
C479	U-4	IC471	T-3
C480	U-4	IC681	T-2
C481	U-4	COILS	
C483	U-3	L681	T-1
C484	T-4	L682	T-2
C485	T-4	TRANSISTORS	
C486	T-4	Q682	T-1
C681	T-1	Q684	S-2
C682	U-2	Q685	U-2
C683	T-2	Q686	U-1
C684	T-2	RESISTORS	
C687	S-2	R471	T-3
C688	U-1	R683	T-2
C689	T-1	R684	U-1
C691	U-2	R685	T-1
C692	U-2	R686	T-1
C694	W-2	R690	T-2
C699	V-2	R691	S-2
CONNECTORS		R692	U-2
CL603A	S-2	R693	T-2
CL604	S-1	R694	T-2
DIODES		R696	T-1
D471	T-3	R697	W-1
D682	T-1	R698	W-1
D686	U-3		

Main 5/5 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C701	Y-1	R705	BB-2
C703	BB-2	R707	BB-4
C705	CC-4	R709	CC-4
C706	CC-4	R710	BB-4
C707	BB-4	R711	AA-3
C708	BB-4	R712	CC-4
C709	BB-4	R714	CC-4
C710	CC-4	R723	CC-4
C711	CC-3	R724	CC-4
C713	CC-3	R725	CC-4
C714	CC-3	R726	CC-4
C715	Z-1	R727	CC-3
C716	BB-4	R728	BB-4
C719	BB-1	R729	BB-4
C723	BB-3	R730	BB-4
C724	AA-3	R731	CC-3
CONNECTORS		R732	CC-3
CN751	Y-4	R733	CC-3
CN752	Y-2	R734	CC-3
DIODES		R735	CC-3
D706	CC-4	R736	CC-3
D711	CC-3	R737	CC-3
D712	AA-3	R738	BB-2
D713	Z-1	R739	CC-2
D715	BB-4	R740	AA-2
D716	CC-3	R741	Z-1
ICS		R742	AA-2
IC701	CC-2	R743	AA-2
IC703	AA-2	R744	AA-2
COILS		R745	AA-2
L701	CC-3	R746	AA-2
L702	CC-3	R747	AA-2
TRANSISTORS		R748	AA-2
Q701	BB-3	R749	CC-2
Q702	CC-4	R750	Y-1
Q703	CC-3	R751	Y-2
Q704	BB-4	R752	BB-3
Q705	BB-3	R753	Y-2
Q706	BB-4	R754	BB-3
Q707	AA-2	R755	AA-3
Q708	AA-2	R756	BB-4
Q709	BB-2	R757	BB-4
Q710	BB-3	TEST POINT	
Q711	BB-4	TP009	BB-3
RESISTORS		MISCELLANEOUS	
R701	Y-1	JK701	Y-1
R702	Y-1	JK702	Y-1
R703	CC-4	JK703	CC-4
R704	CC-4		

Main 5/5 Schematic Diagram

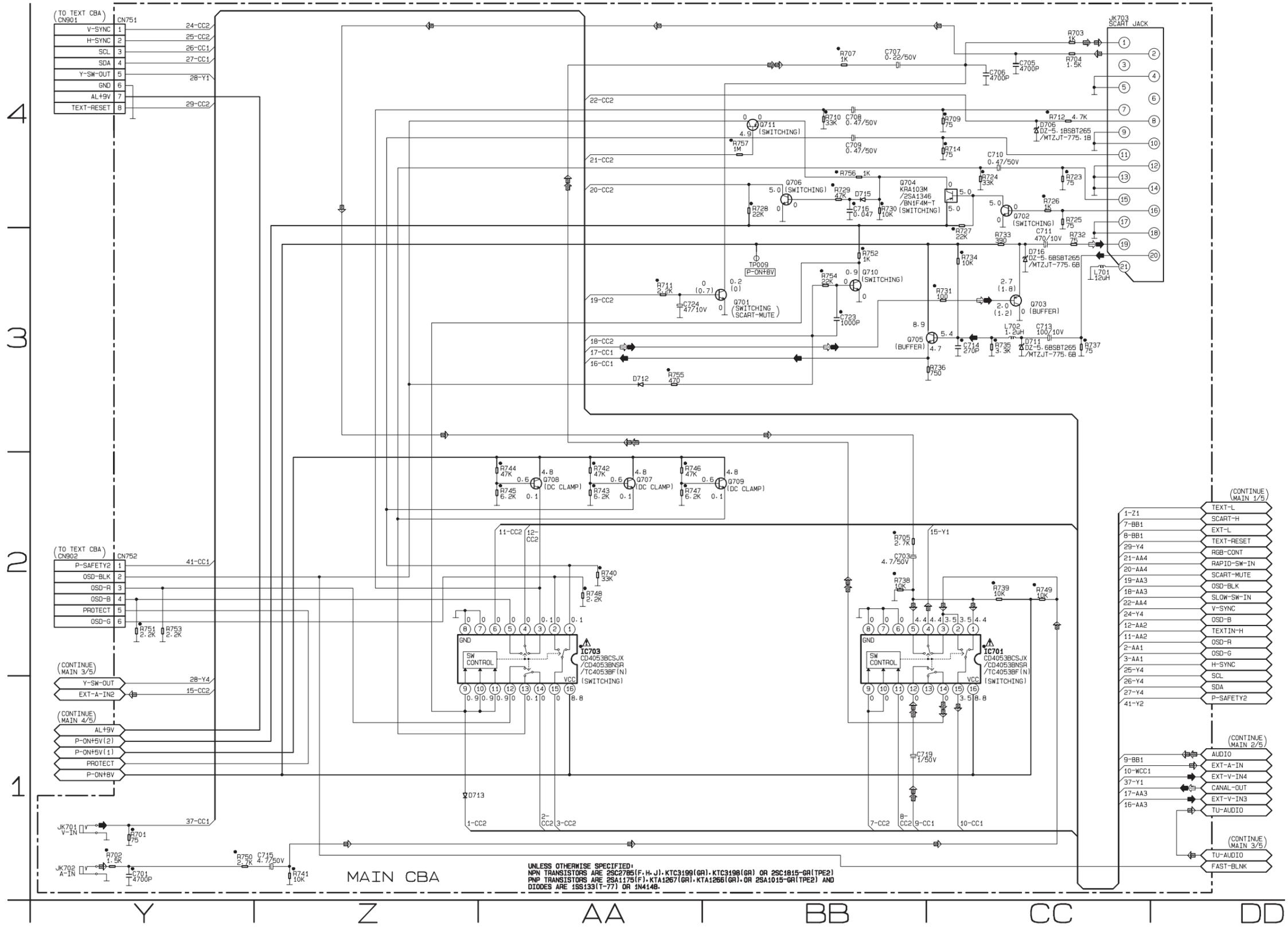
Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



THE SAME VOLTAGE FOR BOTH PLAY & REC MODES. INDICATES THAT THE VOLTAGE IS NOT CONSISTENT HERE.

● = SMD

REC VIDEO SIGNAL PB VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL



UNLESS OTHERWISE SPECIFIED:
 NPN TRANSISTORS ARE 2SC2785(F, H, J), KTC3199(GR), KTC3198(GR) OR 2SC1815-(GR)(TPE2)
 PNP TRANSISTORS ARE 2SA1179(F), KTA1267(GR), KTA1266(GR), OR 2SA1015-(GR)(TPE2) AND
 DIODES ARE 1SS133(T-77) OR 1N4148.

- (CONTINUE MAIN 1/5)
- 1-Z1 TEXT-L
 - 7-BB1 SCART-H
 - 8-BB1 EXT-L
 - 29-Y4 TEXT-RESET
 - 21-AA4 RGB-CONT
 - 20-AA4 RAPID-SW-IN
 - 19-AA3 SCART-MUTE
 - 18-AA3 OSD-BLK
 - 22-AA4 SLOW-SW-IN
 - 24-Y4 V-SYNC
 - 12-AA2 OSD-B
 - 11-AA2 TEXTIN-H
 - 2-AA1 OSD-R
 - 3-AA1 OSD-G
 - 25-Y4 H-SYNC
 - 26-Y4 SCL
 - 27-Y4 SDA
 - 41-Y2 P-SAFETY2

- (CONTINUE MAIN 2/5)
- 9-BB1 AUDIO
 - 10-WCC1 EXT-A-IN
 - 37-Y1 EXT-V-IN4
 - 17-AA3 CANAL-OUT
 - 16-AA3 EXT-V-IN3
 - TU-AUDIO

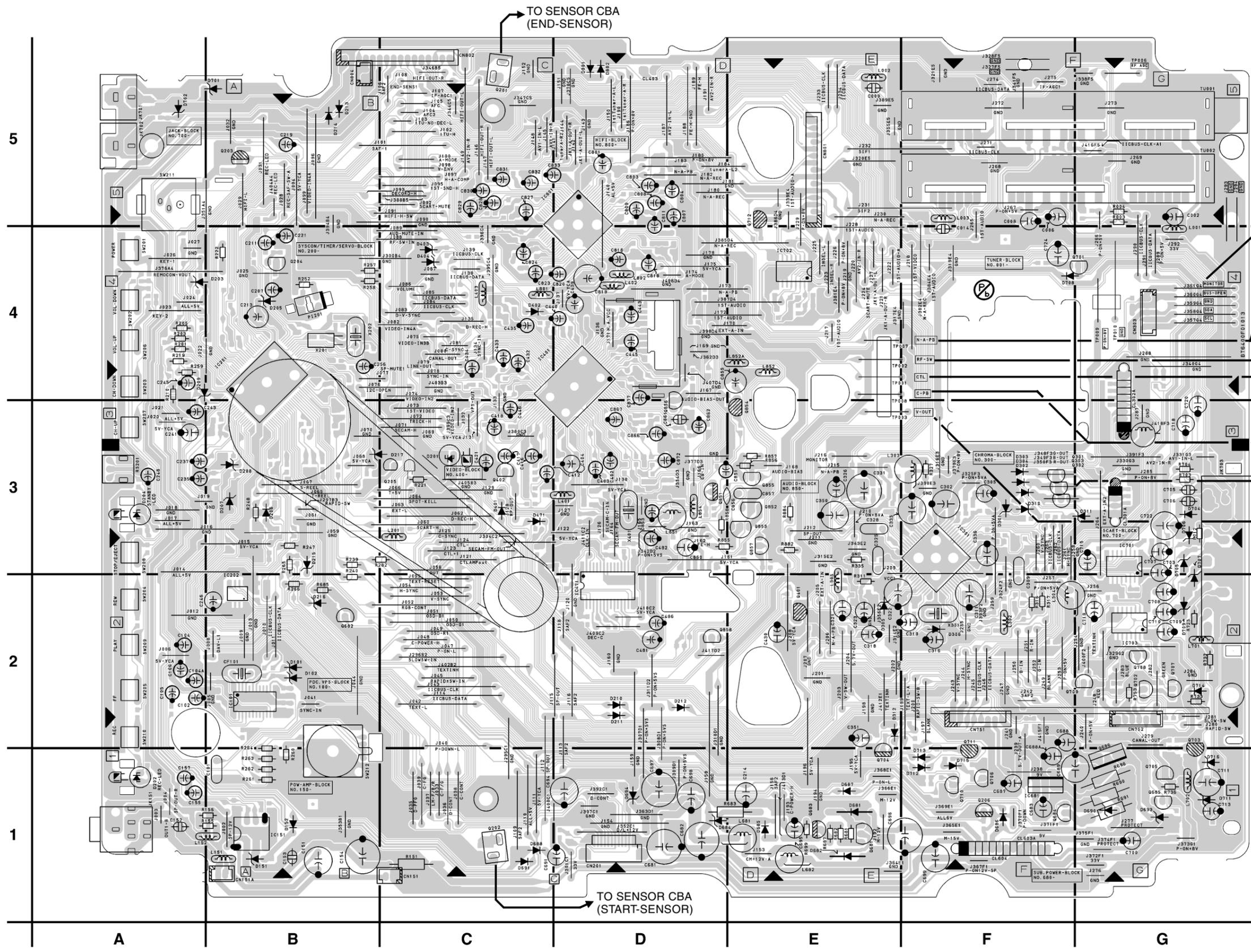
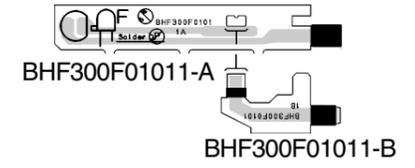
- (CONTINUE MAIN 3/5)
- TU-AUDIO
 - FAST-BLNK

Main CBA Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position						
CAPACITORS		CAPACITORS		CAPACITORS		CAPACITORS		DIODES		TRANSISTORS		RESISTORS		RESISTORS		RESISTORS		RESISTORS	
C001	G-5	C303	F-3	C421	C-3	C716	F-1	D402	C-4	Q704	E-1	R233	B-4	R311	E-2	R697	D-1	R861	D-3
C002	G-5	C304	F-3	C424	C-4	C719	G-2	D471	C-3	Q705	G-1	R234	B-4	R312	F-3	R698	D-1	R862	D-3
C006	F-4	C305	F-3	C425	C-4	C723	F-1	D682	E-1	Q706	F-1	R235	B-3	R313	F-3	R701	A-5	R863	D-3
C007	F-5	C307	F-2	C426	C-4	C724	F-4	D686	F-1	Q707	G-2	R236	B-3	R314	F-2	R702	A-5	R864	D-3
C008	F-5	C308	F-3	C427	C-4	C851	E-3	D687	E-1	Q708	G-2	R237	B-3	R315	F-2	R703	G-3	R865	D-3
C009	E-5	C309	F-2	C430	E-2	C855	E-4	D688	C-1	Q709	F-2	R238	B-3	R316	F-2	R704	G-3	R866	D-3
C012	F-5	C310	F-2	C431	C-4	C856	E-3	D690	G-1	Q710	F-1	R239	B-3	R317	F-2	R705	G-3	R867	D-3
C151	B-1	C311	F-2	C432	C-4	C857	E-3	D691	C-1	Q711	F-2	R240	B-3	R318	F-2	R707	G-3	R869	D-4
C152	A-1	C312	F-2	C433	C-4	C858	D-3	D693	G-1	Q851	D-3	R241	B-3	R320	E-2	R709	G-3	R870	D-4
C154	B-1	C313	F-2	C434	C-4	C859	D-3	D694	D-1	Q852	E-3	R242	B-3	R321	E-2	R710	G-2	R871	D-3
C155	A-1	C314	F-2	C435	C-4	C860	D-3	D706	G-3	Q853	E-3	R243	B-3	R322	E-3	R711	F-4	R874	D-4
C156	B-1	C315	F-2	C436	C-4	C861	D-3	D711	G-1	Q854	E-3	R244	B-3	R323	E-3	R712	G-3	R876	D-3
C157	A-1	C316	F-2	C438	C-4	C862	D-3	D712	F-1	Q855	E-3	R248	B-3	R324	E-3	R714	G-2	R877	D-3
C160	B-1	C317	F-2	C440	D-4	C863	D-3	D713	F-1	Q856	D-3	R249	B-3	R325	E-3	R723	G-2	R878	D-4
C203	C-5	C318	F-2	C441	D-4	C864	D-3	D715	F-1	Q857	E-3	R250	B-3	R326	E-3	R724	G-2	R879	D-4
C205	C-1	C319	F-2	C442	D-4	C865	D-3	D716	G-1	RESISTORS		R254	B-3	R327	F-3	R725	G-2	R884	E-3
C207	B-4	C320	F-2	C443	D-4	C866	D-3	ICS		R003	G-5	R255	B-3	R328	F-3	R726	G-2	SWITCHES	
C208	B-4	C321	E-2	C444	D-4	C867	D-3	IC151	B-1	R004	G-5	R256	B-3	R332	G-4	R727	F-2	SW201	A-4
C209	B-4	C322	E-2	C445	D-4	C868	D-3	IC201	B-4	R005	G-5	R257	B-4	R333	G-4	R728	F-1	SW202	A-4
C210	B-4	C323	E-2	C452	C-4	C869	D-3	IC202	B-2	R006	G-5	R258	B-4	R334	G-4	R729	F-1	SW203	A-4
C211	B-4	C324	E-2	C471	D-3	C871	D-3	IC301	F-3	R151	C-1	R259	A-4	R335	E-3	R730	E-2	SW204	A-2
C212	B-4	C325	E-3	C472	C-2	C872	D-3	IC401	C-4	R152	B-1	R260	B-1	R336	F-2	R731	G-2	SW205	A-2
C213	B-4	C326	E-3	C473	C-2	C874	D-3	IC471	D-2	R153	B-1	R261	B-1	R339	F-3	R732	G-2	SW206	A-4
C214	E-1	C327	E-3	C474	D-2	C875	D-3	IC681	F-1	R154	B-1	R262	B-1	R340	F-3	R733	G-2	SW207	A-3
C217	B-4	C328	E-3	C475	D-3	C876	D-4	IC701	G-3	R155	B-1	R263	B-1	R401	D-3	R734	G-1	SW208	A-3
C218	B-4	C330	E-3	C476	D-3	CONNECTORS		IC703	G-2	R156	B-1	R264	B-1	R402	D-3	R735	G-1	SW209	A-2
C221	B-4	C331	E-3	C478	D-3	CL301A	G-3	COILS		R201	A-4	R265	B-3	R405	C-3	R736	G-1	SW210	A-2
C222	B-4	C332	E-3	C479	C-3	CL302A	G-3	J418F3	G-3	R202	A-4	R266	B-2	R406	C-3	R737	G-1	SW211	A-5
C223	B-4	C333	E-3	C480	D-2	CL401	D-4	L001	G-4	R203	A-4	R267	B-2	R407	C-3	R738	G-2	SW212	B-1
C224	B-3	C334	E-3	C481	D-2	CL402	D-3	L151	B-1	R204	A-4	R268	B-3	R408	E-2	R739	G-2	CRYSTAL OSCILATOR	
C225	B-3	C336	F-3	C483	D-2	CL403	D-5	L152	A-1	R205	A-4	R269	B-2	R409	E-2	R740	G-2	X201	B-4
C226	C-3	C338	G-4	C484	D-2	CL603A	F-1	L201	C-3	R206	A-4	R270	A-3	R410	E-2	R741	G-2	X202	B-4
C227	B-3	C339	G-4	C485	D-2	CL604	F-1	L302	F-2	R207	A-4	R271	B-4	R411	C-4	R742	G-2	X301	F-2
C228	B-3	C340	F-3	C486	D-2	CN151	C-1	L303	E-3	R208	A-4	R272	B-4	R412	C-4	R743	G-2	X401	D-3
C229	B-3	C341	E-3	C681	D-1	CN201	D-1	L304	F-2	R209	A-4	R273	B-4	R413	C-4	R744	G-2	TEST POINTS	
C230	B-3	C344	G-4	C682	D-1	CN303	G-4	L305	E-2	R210	A-4	R274	B-4	R414	C-4	R745	G-2	TP001	E-4
C231	B-3	C350	E-3	C683	F-1	CN751	F-2	L401	D-3	R211	A-4	R275	B-3	R415	C-4	R746	G-2	TP002	E-4
C233	B-3	C401	D-3	C684	G-1	CN752	G-2	L402	D-4	R212	A-2	R276	B-3	R416	C-4	R747	G-2	TP003	E-3
C234	B-3	C402	D-3	C687	F-1	DIODES		L403	C-4	R213	B-4	R277	B-3	R417	D-4	R748	G-2	TP006	G-5
C235	A-3	C403	D-3	C688	F-2	D151	B-1	L681	E-1	R214	A-4	R278	B-3	R418	D-4	R749	G-2	TP007	E-4
C236	B-3	C404	D-3	C689	F-1	D152	B-1	L682	E-1	R215	A-4	R279	B-3	R420	D-4	R750	G-3	TP008	E-3
C237	A-3	C405	D-3	C691	C-1	D201	C-3	L701	G-2	R216	A-3	R280	B-3	R422	C-4	R751	G-2	TP009	G-4
C238	A-3	C406	D-3	C692	F-2	D202	A-1	L702	G-1	R217	A-2	R281	B-4	R423	C-4	R752	F-1	TP010	G-4
C239	B-3	C407	D-3	C694	C-1	D204	A-3	L852	E-4	R218	A-4	R282	B-3	R424	C-4	R753	G-2	MISCELLANEOUS	
C240	B-3	C408	D-3	C699	F-1	D205	B-4	L854	D-3	R219	A-4	R287	B-4	R425	C-4	R754	F-1	JK151	A-1
C241	A-3	C409	D-3	C701	A-5	D206	B-3	TRANSISTORS		R220	A-4	R288	B-3	R426	C-4	R755	E-1	JK701	A-5
C242	A-3	C410	D-3	C703	G-3	D210	D-2	Q204	B-4	R221	C-3	R289	B-2	R471	D-3	R756	F-1	JK702	A-5
C243	B-3	C411	C-3	C705	G-3	D211	D-2	Q205	C-3	R222	B-4	R301	F-3	R683	E-1	R757	F-2	JK703	G-3
C244	A-4	C412	D-3	C706	G-3	D212	D-2	Q206	F-1	R223	A-1	R302	F-3	R684	F-2	R851	F-3	RS201	A-3
C245	A-4	C413	C-3	C707	G-3	D213	B-5	Q401	E-2	R224	A-3	R303	F-3	R685	B-2	R852	E-3	TU001	G-5
C248	A-3	C414	C-3	C708	G-2	D214	B-5	Q682	B-2	R226	B-4	R304	F-3	R686	B-2	R853	D-3		
C253	B-5	C415	C-3	C709	G-2	D302	F-3	Q684	F-1	R227	B-4	R305	F-3	R690	G-1	R854	D-3		
C254	D-2	C416	C-3	C710	G-2	D303	F-3	Q685	G-1	R228	B-4	R306	F-3	R691	G-1	R856	E-3		
C255	D-2	C417	C-3	C711	G-1	D304	F-3	Q686	G-1	R229	B-4	R307	F-3	R692	G-1	R857	E-3		
C256	B-4	C418	C-3	C713	G-1	D305	E-2	Q701	G-4	R230	B-4	R308	F-3	R693	G-1	R858	D-3		
C301	F-3	C419	C-3	C714	G-1	D306	F-2	Q702	G-2	R231	B-4	R309	F-3	R694	F-2	R859	D-4		
C302	F-3	C420	C-3	C715	G-2	D401	C-3	Q703	G-2	R232	B-4	R310	F-2	R696	G-1	R860	D-3		

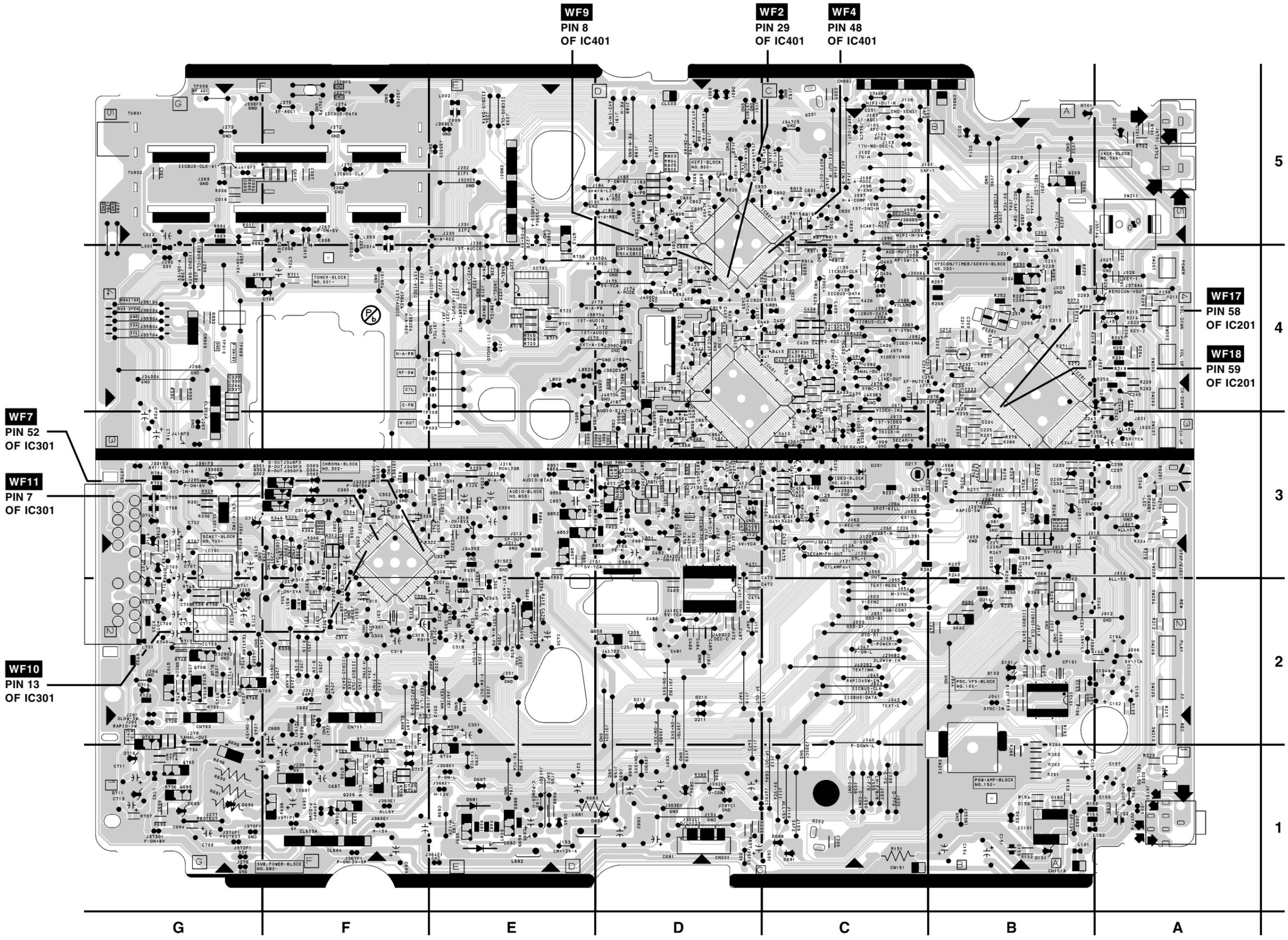
Main CBA Top View

Sensor CBA Top View



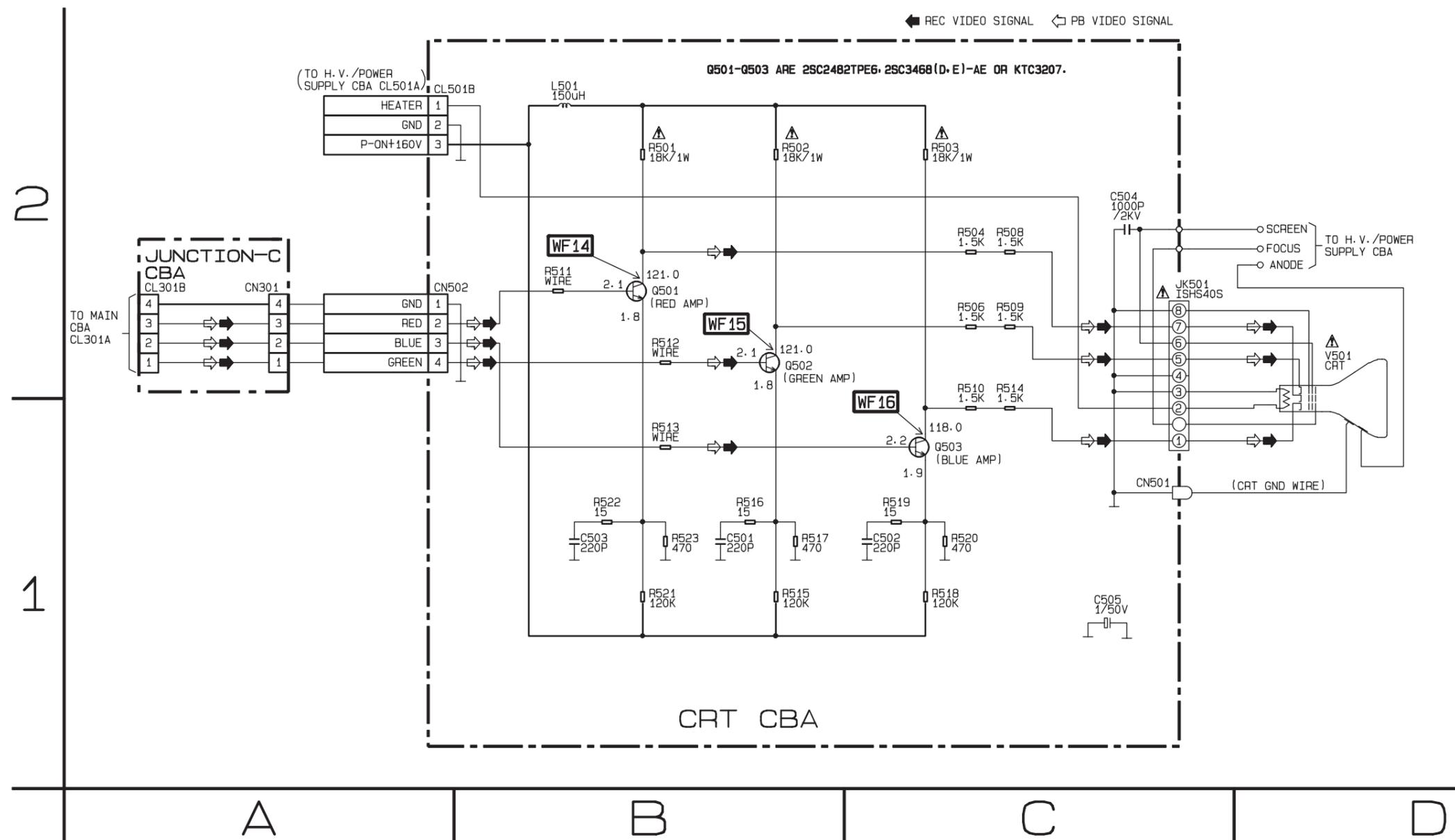
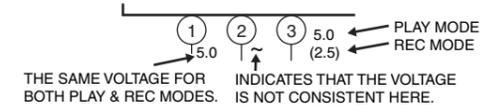
- J361G4 (SECAM Black Level Adjustment)
- WF8
- TP007
- N-A-PB
- WF1
- TP002
- RF-SW
- WF3
- TP001
- CTL
- WF6
- TP008
- C-PB
- J349F3 (C-Trap Adjustment)
- WF5
- TP003
- V-OUT

Main CBA Bottom View



CRT Schematic Diagram

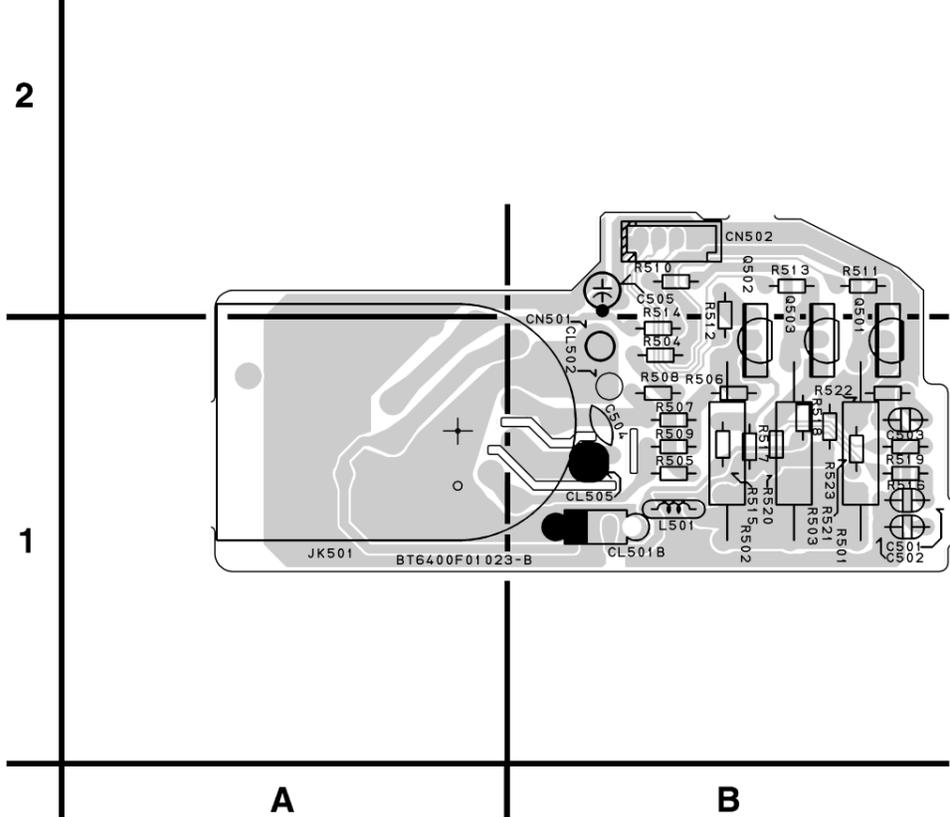
Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



CRT SCHEMATIC DIAGRAM
PARTS LOCATION GUIDE

Ref No.	Position
CAPACITORS	
C501	B-1
C502	C-1
C503	B-1
C504	C-2
C505	C-1
CONNECTORS	
CL501B	A-2
CN501	C-1
CN502	A-2
COIL	
L501	B-2
TRANSISTORS	
Q501	B-2
Q502	B-2
Q503	C-1
RESISTORS	
R501	B-2
R502	B-2
R503	C-2
R504	C-2
R506	C-2
R508	C-2
R509	C-2
R510	C-1
R511	B-2
R512	B-2
R513	B-1
R514	C-1
R515	B-1
R516	B-1
R517	B-1
R518	C-1
R519	C-1
R520	C-1
R521	B-1
R522	B-1
R523	B-1
MISCELLANEOUS	
JK501	C-2

CRT CBA Top View



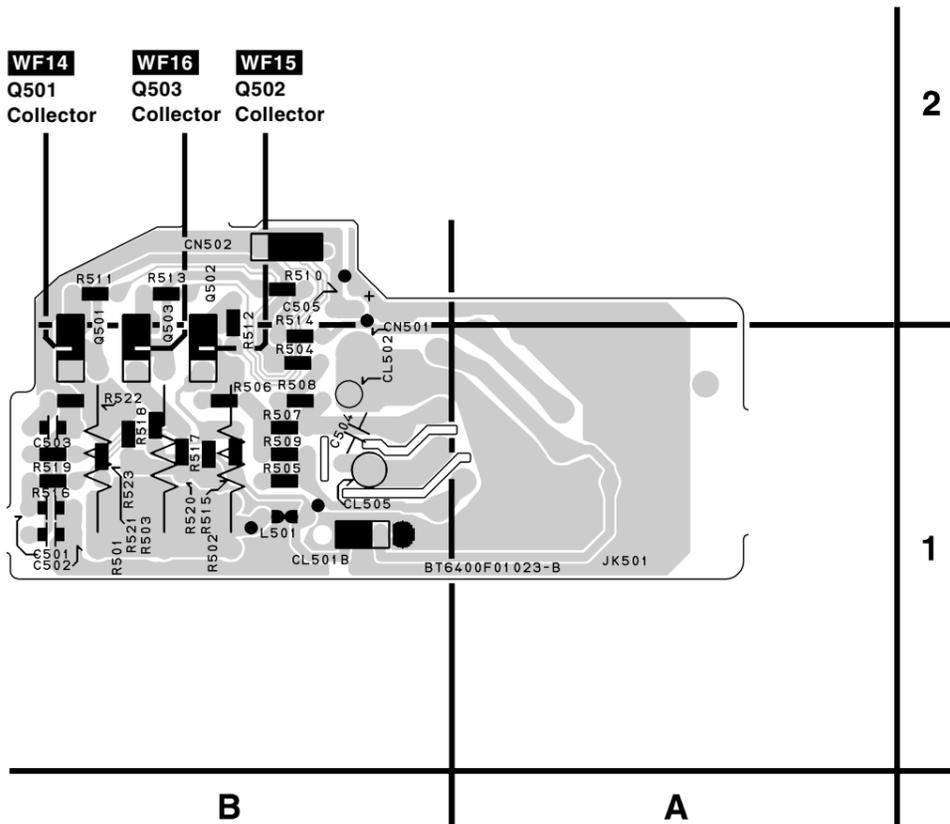
H.V./Power Supply 1/2 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		DIODES		RESISTORS	
C602	B-1	D624	C-1	R626	C-1
C604	A-1	D625	C-1	R627	B-2
C605	B-1	D626	C-3	R628	C-3
C607	B-2	D627	C-1	R629	C-3
C608	B-2	D629	D-3	R631	C-2
C609	B-2	D630	D-3	R632	C-2
C610	B-2	D631	D-2	R633	C-1
C611	A-2	D632	D-3	R634	C-1
C613	B-3	D633	D-3	R635	C-2
C614	A-3	D634	D-2	R636	C-1
C615	B-2	D635	D-2	R637	C-1
C616	A-3	D636	D-1	R638	C-2
C618	C-2	D637	D-1	R639	C-2
C619	C-3	D638	D-2	R640	D-3
C621	C-3	D640	D-3	R641	D-3
C622	C-3	D641	C-3	R642	D-2
C624	C-2	IC		R643	D-3
C625	C-3	IC601	B-2	R644	D-3
C626	C-3	COILS		R645	C-2
C627	C-3	L601	B-1	R646	D-3
C629	D-3	L602	B-1	R647	D-3
C630	D-3	L603	C-3	R649	D-2
C632	D-2	TRANSISTORS		R651	D-2
C633	D-2	Q602	A-3	R652	D-3
C634	D-1	Q603	B-2	R653	D-2
C635	E-3	Q604	B-2	R654	C-2
C636	C-3	Q605	D-3	R655	C-1
CONNECTORS		Q606	D-3	R656	C-1
CN601	A-2	Q607	D-2	R657	D-1
CN602	E-3	Q608	D-1	R658	C-2
DIODES		RESISTORS		R659	C-2
D601	B-2	R601	A-1	R660	D-3
D602	B-2	R602	B-1	R661	C-1
D603	B-2	R603	B-1	R662	B-3
D604	B-2	R604	B-2	SWITCH	
D605	B-2	R605	B-2	SW602	A-1
D609	B-2	R611	B-3	MISCELLANEOUS	
D610	B-3	R612	B-3	BC602	A-3
D612	A-2	R613	A-3	BC604	C-3
D615	C-2	R615	B-2	BC605	C-3
D616	E-2	R616	A-2	F601	A-1
D617	C-3	R617	A-2	PS602	A-2
D618	C-3	R618	B-2	SA601	A-1
D619	B-3	R619	B-2	T601	B-3
D620	C-3	R620	B-3	TM601	A-1
D621	C-3	R621	B-3	TM602	A-1
D622	C-1	R622	B-3	VARIABLE RESISTOR	
D623	C-1	R624	B-3	VR601	C-2

CRT CBA PARTS LOCATION GUIDE

Ref No.	Position
CAPACITORS	
C501	B-1
C502	B-1
C503	B-1
C504	B-1
C505	B-2
CONNECTORS	
CL501B	B-1
CN501	B-1
CN502	B-2
COIL	
L501	B-1
TRANSISTORS	
Q501	B-1
Q502	B-2
Q503	B-1
RESISTORS	
R501	B-1
R502	B-1
R503	B-1
R504	B-1
R506	B-1
R508	B-1
R509	B-1
R510	B-2
R511	B-2
R512	B-1
R513	B-2
R514	B-1
R515	B-1
R516	B-1
R517	B-1
R518	B-1
R519	B-1
R520	B-1
R521	B-1
R522	B-1
R523	B-1
MISCELLANEOUS	
JK501	A-1

CRT CBA Bottom View



BT6400F01023-B

H.V./Power Supply 1/2 Schematic Diagram

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

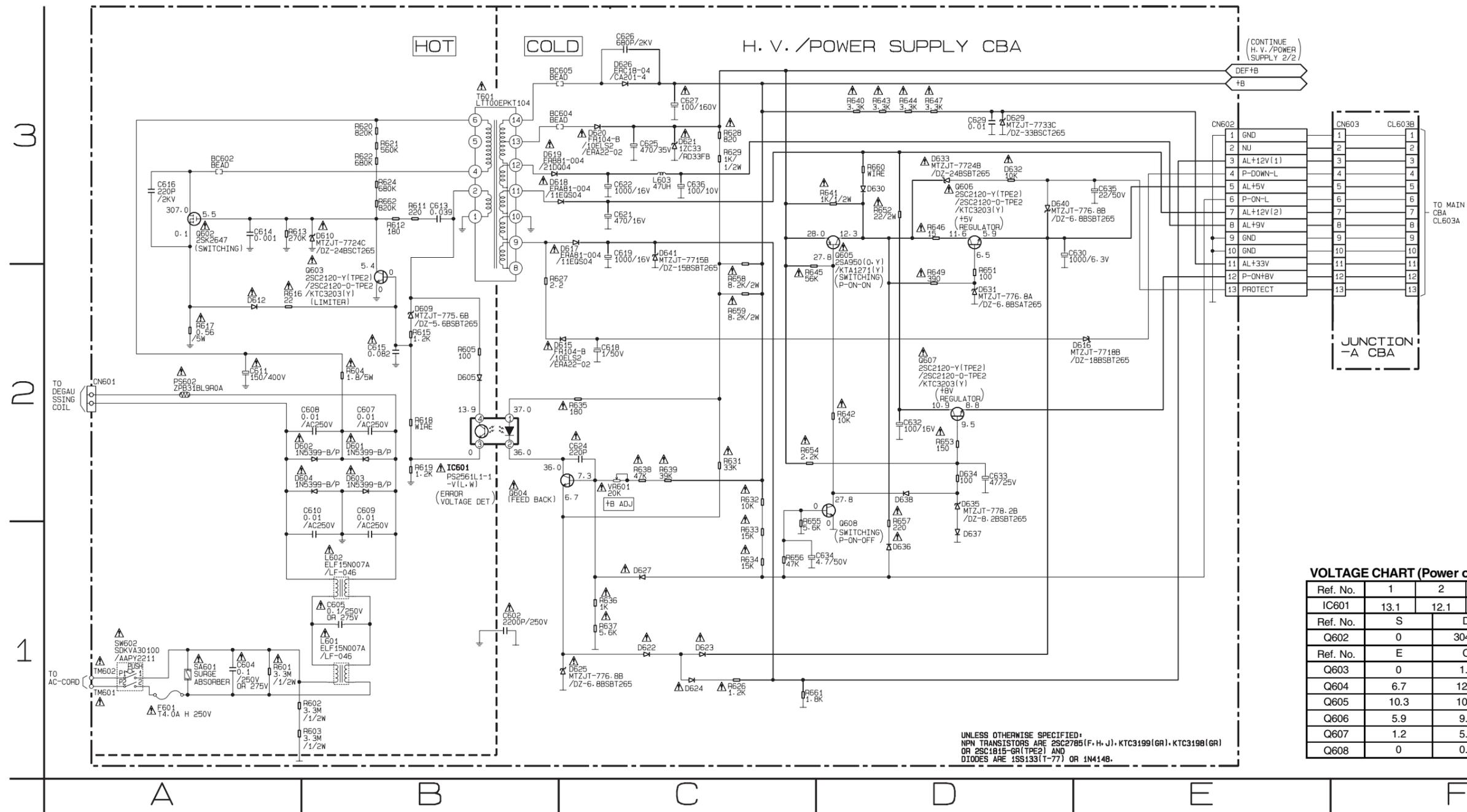
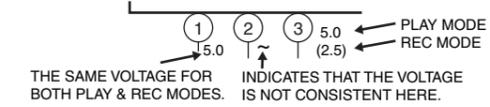
CAUTION

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.

NOTE:

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

Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



VOLTAGE CHART (Power off mode)

Ref. No.	1	2	3	4
IC601	13.1	12.1	0.2	1.6
Q602	0	304.0	1.8	
Q603	0	1.8	0.2	
Q604	6.7	12.0	7.3	
Q605	10.3	10.3	9.6	
Q606	5.9	9.7	6.5	
Q607	1.2	5.5	1.2	
Q608	0	0.1	0.7	

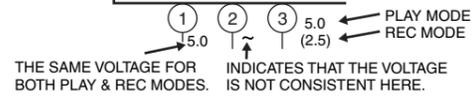
UNLESS OTHERWISE SPECIFIED:
NPN TRANSISTORS ARE 2SC2785 (F, H, J), KTC3199 (GR), KTC3198 (GR)
OR 2SC1815-GR (TPE2) AND
DIODES ARE 1SS133 (T-77) OR 1N4148.

H.V./Power Supply 2/2 Schematic Diagram

H.V./POWER SUPPLY 2/2 SCHEMATIC DIAGRAM PARTS LOCATION GUIDE

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		DIODES		TRANSISTORS		RESISTORS		RESISTORS		RESISTORS	
C551	G-1	C567	J-2	D554	H-2	Q551	I-2	R561	H-2	R581	I-2	R595	G-2
C552	G-1	C569	I-1	D556	J-2	Q553	H-2	R564	H-2	R583	I-1	R596	G-1
C553	G-2	C570	H-1	D557	J-2	Q554	H-1	R565	G-2	R584	J-2	MISCELLANEOUS	
C554	G-2	C572	I-2	D558	I-2	RESISTORS		R566	G-3	R585	I-1	BC551	I-2
C555	G-2	C575	H-2	D560	I-1	R551	G-1	R567	G-3	R586	I-1	T551	J-3
C556	G-2	C577	G-2	D562	H-2	R552	G-1	R568	G-1	R587	I-1	T552	H-3
C558	G-2	C578	H-2	D563	J-2	R553	G-2	R569	G-2	R588	H-1	TEST POINTS	
C559	I-3	CONNECTORS		IC		R554	G-2	R570	I-2	R589	H-2	TP501	I-2
C560	I-3	CN551	H-3	IC551	G-3	R555	G-1	R572	H-2	R590	J-2	TP502	I-2
C561	H-2	CN552	J-1	COILS		R556	G-1	R573	H-2	R591	I-2	TP503	J-2
C562	H-2	DIODES		L552	H-3	R558	G-2	R574	H-2	R592	H-2	TP504	J-3
C565	I-2	D551	G-2	L553	I-2	R559	G-2	R575	H-3	R593	J-2		
C566	H-3	D553	H-2	L554	J-2	R560	H-2	R579	I-2	R594	J-2		

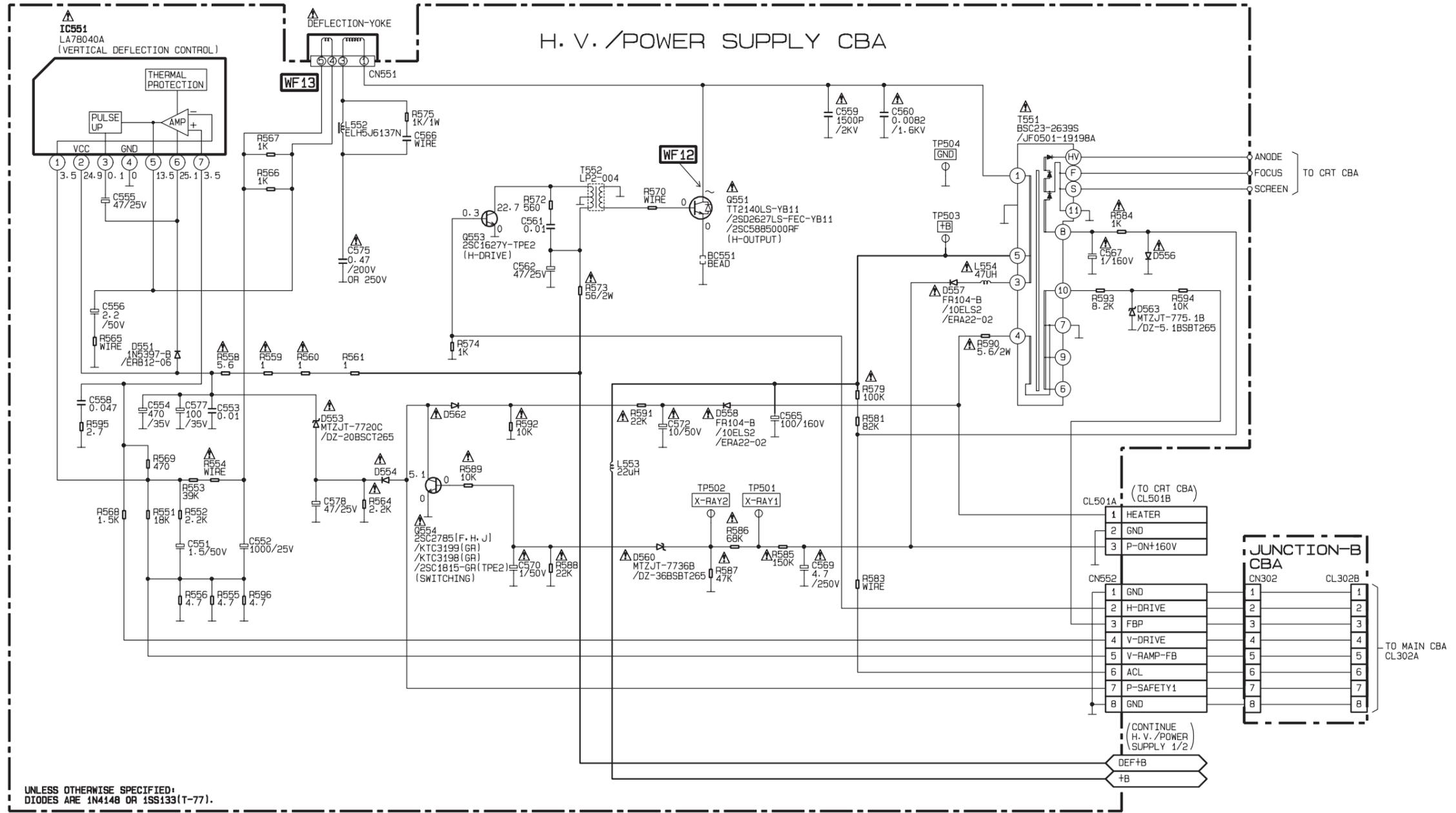
Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



3

2

1



UNLESS OTHERWISE SPECIFIED:
DIODES ARE 1N4148 OR 1SS133(T-77).

G

H

I

J

K

H.V./Power Supply CBA Top View

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

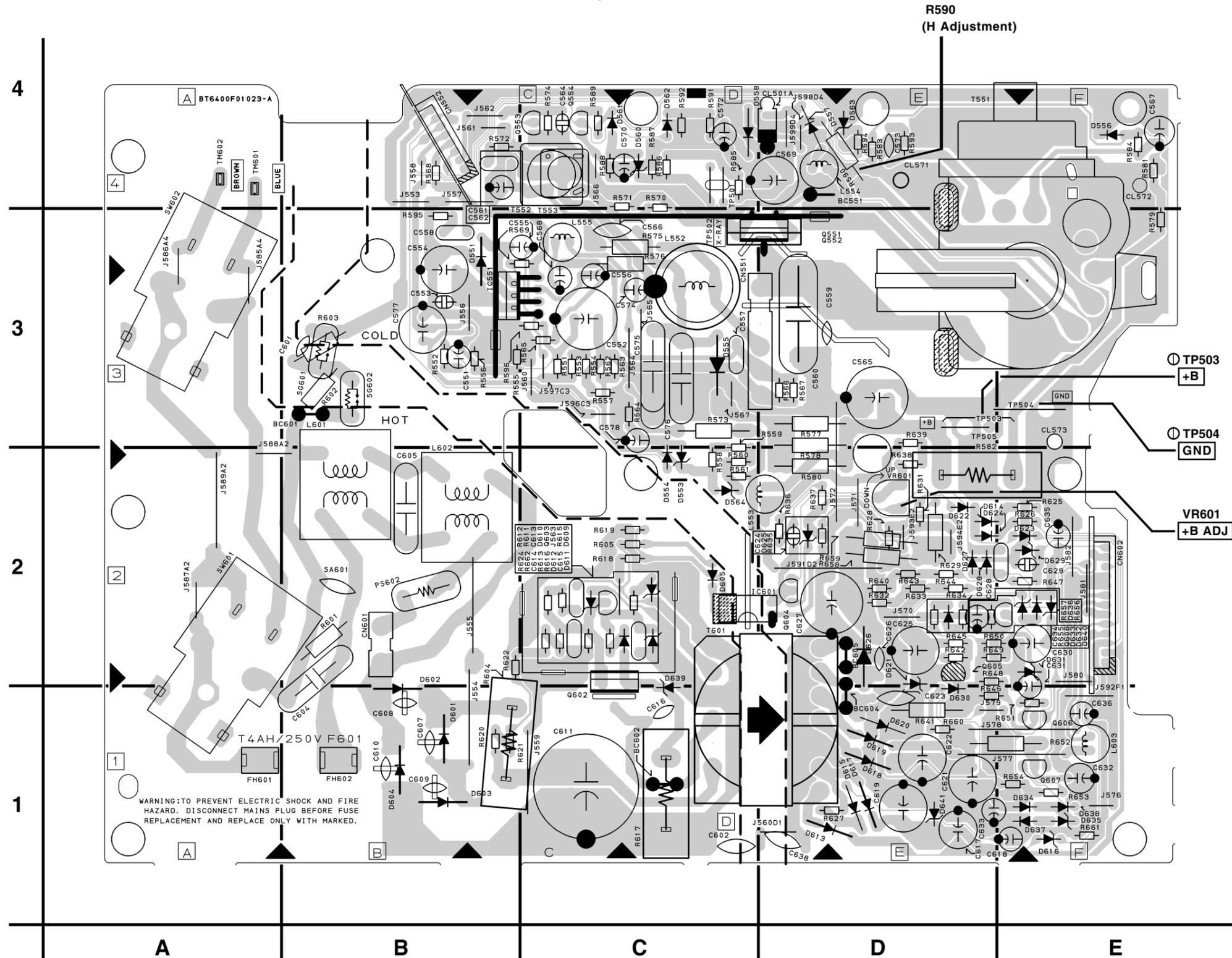
CAUTION

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.

NOTE :

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

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



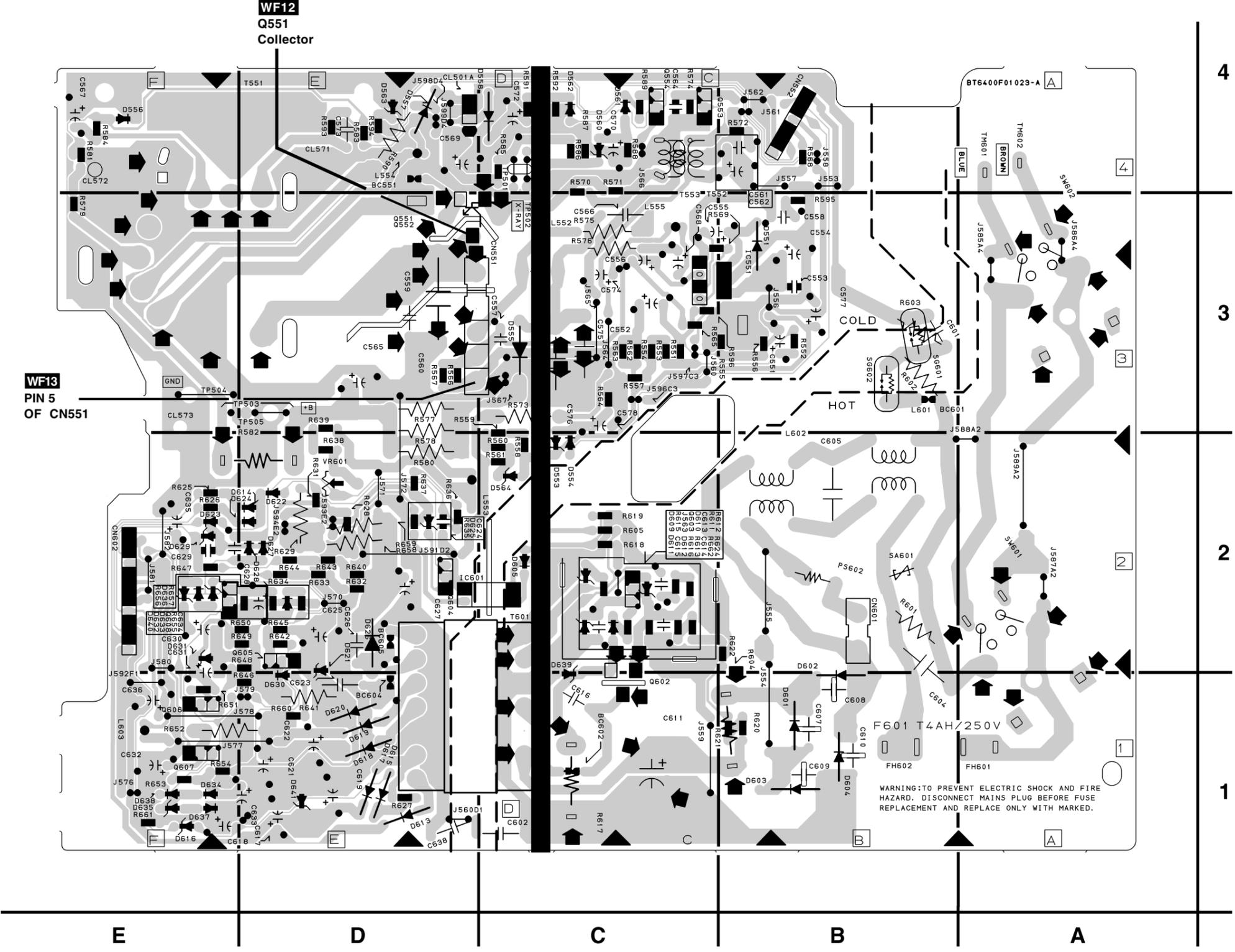
H.V./Power Supply CBA Bottom View

CAUTION !
 Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
 If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
 Otherwise it may cause some components in the power supply circuit to fail.

CAUTION
 FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
 REPLACE ONLY WITH THE SAME TYPE FUSE.

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

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



WF12
Q551
 Collector

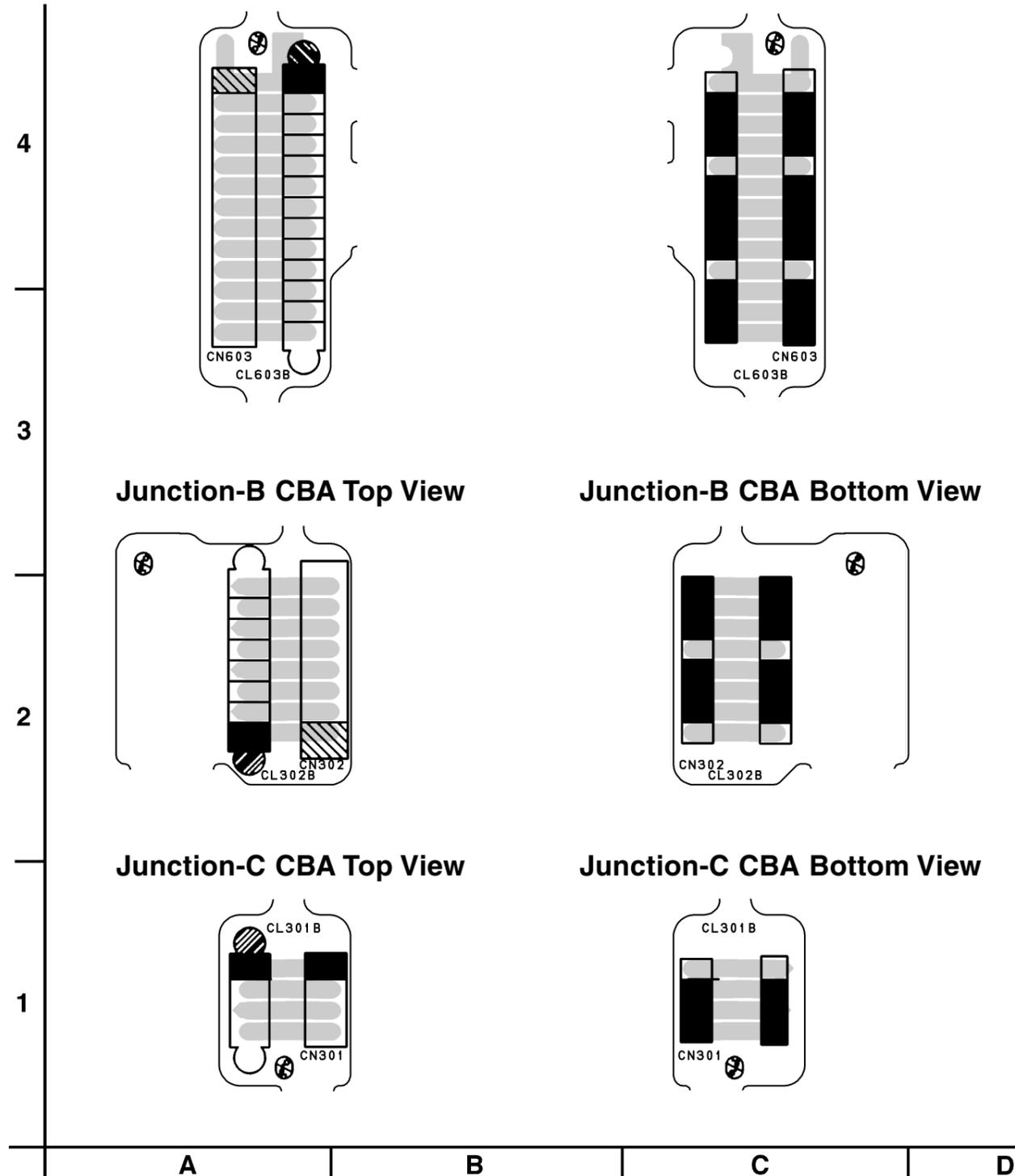
WF13
 PIN 5
 OF CN551

H.V./Power Supply CBA Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		DIODES		TRANSISTORS		RESISTORS	
C551	B-3	D557	D-4	Q607	E-1	R626	E-2
C552	C-3	D558	C-4	Q608	E-2	R627	D-1
C553	B-3	D560	C-4	RESISTORS		R628	D-2
C554	B-3	D562	C-4	R551	C-3	R629	D-2
C555	B-3	D563	D-4	R552	B-3	R631	D-2
C556	C-3	D601	B-1	R553	C-3	R632	D-2
C558	B-3	D602	B-2	R554	C-3	R633	D-2
C559	D-3	D603	B-1	R555	B-3	R634	D-2
C560	D-3	D604	B-1	R556	B-3	R635	D-2
C561	B-3	D605	C-2	R558	C-2	R636	D-2
C562	B-3	D609	C-2	R559	D-3	R637	D-2
C565	D-3	D610	B-2	R560	C-2	R638	D-2
C566	C-3	D612	C-2	R561	C-2	R639	D-3
C567	E-4	D615	D-1	R564	C-3	R640	D-2
C569	D-4	D616	E-1	R565	C-3	R641	D-1
C570	C-4	D617	D-1	R566	D-3	R642	D-2
C572	C-4	D618	D-1	R567	D-3	R643	D-2
C575	C-3	D619	D-1	R568	B-4	R644	D-2
C577	B-3	D620	D-1	R569	B-3	R645	D-2
C578	C-3	D621	D-2	R570	C-4	R646	D-1
C602	C-1	D622	D-2	R572	B-4	R647	E-2
C604	B-1	D623	E-2	R573	C-3	R649	D-2
C605	B-2	D624	D-2	R574	C-4	R651	E-1
C607	B-1	D625	D-2	R575	C-3	R652	E-1
C608	B-1	D626	D-2	R579	E-3	R653	E-1
C609	B-1	D627	D-2	R581	E-4	R654	E-1
C610	B-1	D629	E-2	R583	D-4	R655	E-2
C611	C-1	D630	D-1	R584	E-4	R656	E-2
C613	B-2	D631	E-2	R585	C-4	R657	E-2
C614	B-2	D632	E-2	R586	C-4	R658	D-2
C615	C-2	D633	E-2	R587	C-4	R659	D-2
C616	C-1	D634	E-1	R588	C-4	R660	D-1
C618	D-1	D635	E-1	R589	C-4	R661	E-1
C619	D-1	D636	E-2	R590	D-4	R662	B-2
C621	D-1	D637	E-1	R591	C-4	SWITCH	
C622	D-1	D638	E-1	R592	C-4	SW602	A-3
C624	C-2	D640	E-2	R593	D-4	TEST POINTS	
C625	D-2	D641	D-1	R594	D-4	TP501	C-4
C626	D-2	ICS		R595	B-3	TP502	C-3
C627	D-2	IC551	B-3	R596	B-3	TP503	D-3
C629	E-2	IC601	C-2	R601	B-2	TP504	E-3
C630	E-2	COILS		R602	B-3	MISCELLANEOUS	
C632	E-1	L552	C-3	R603	B-3	BC551	D-4
C633	D-1	L553	C-2	R604	B-2	BC602	C-1
C634	E-2	L554	D-4	R605	C-2	BC604	D-1
C635	E-2	L601	B-3	R611	B-2	BC605	D-2
C636	E-1	L602	B-3	R612	B-2	F601	B-1
CONNECTORS		L603	E-1	R613	B-2	PS602	B-2
CN551	C-3	TRANSISTORS		R615	C-2	SA601	B-2
CN552	B-4	Q551	D-3	R616	C-2	T551	D-4
CN601	B-2	Q553	C-4	R617	C-1	T552	B-3
CN602	E-2	Q554	C-4	R618	C-2	T601	C-2
DIODES		Q602	C-1	R619	C-2	TM601	A-4
D551	B-3	Q603	C-2	R620	B-1	TM602	A-4
D553	C-2	Q604	D-2	R621	B-1	VARIABLE RESISTOR	
D554	C-2	Q605	D-2	R622	B-2	VR601	D-2
D556	E-4	Q606	E-1	R624	B-2		

Junction-A CBA Top View

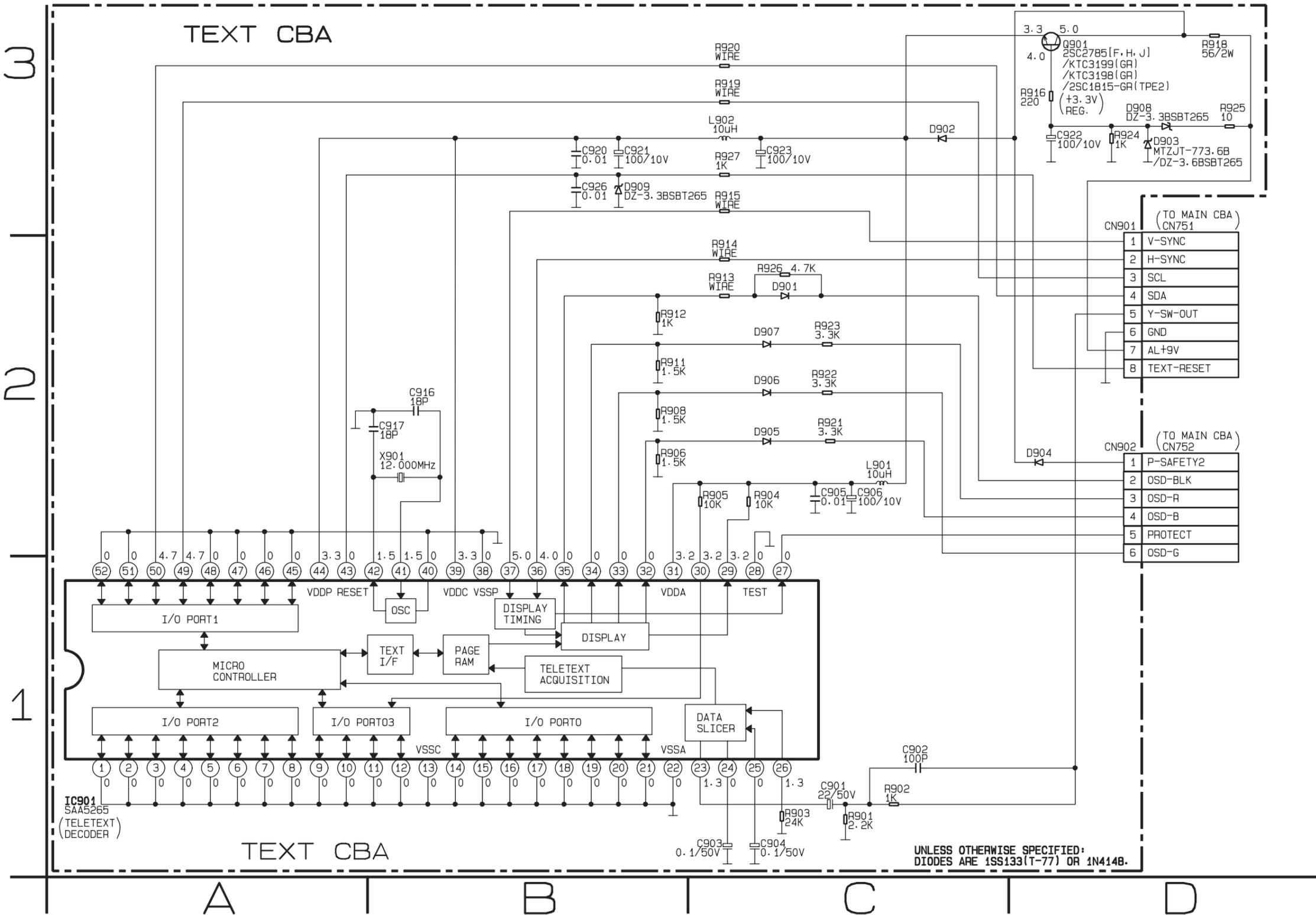
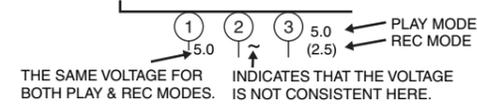
Junction-A CBA Bottom View



BT6400F01013

Text Schematic Diagram

Voltage indications for PLAY and REC modes on the Schematic Diagrams are as shown below:



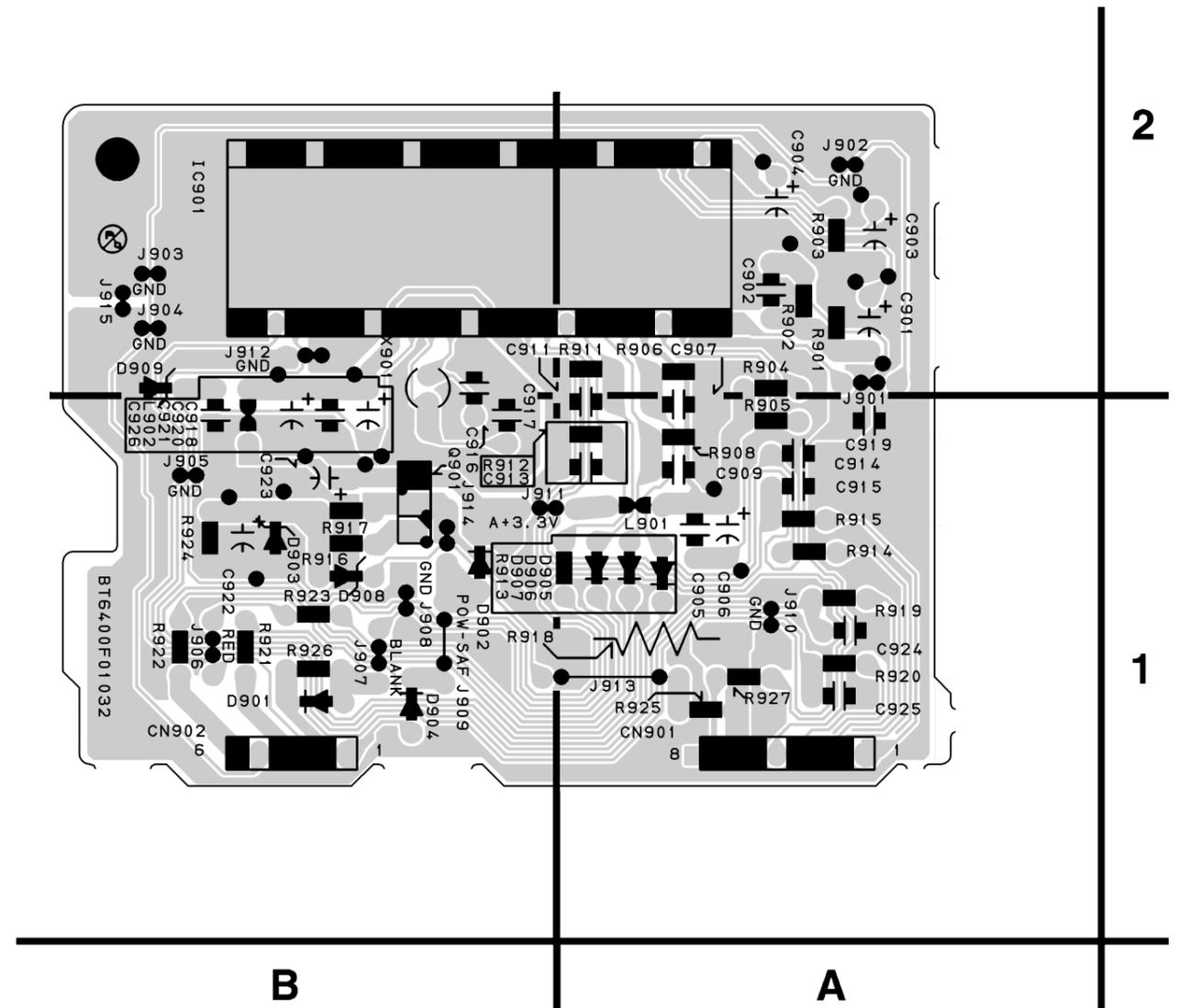
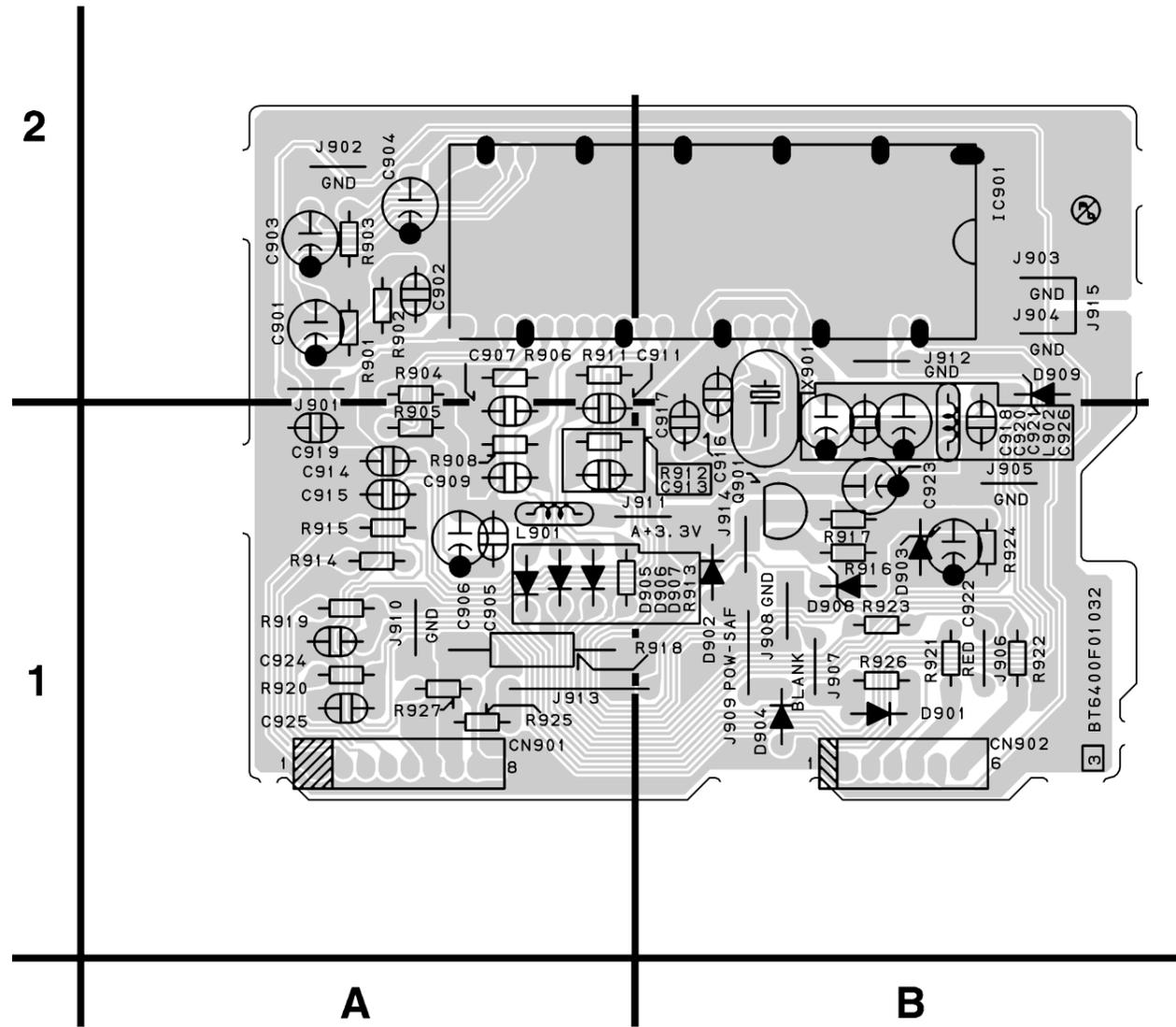
TEXT SCHEMATIC DIAGRAM PARTS LOCATION GUIDE

Ref No.	Position
CAPACITORS	
C901	C-1
C902	C-1
C903	C-1
C904	C-1
C905	C-2
C906	C-2
C916	B-2
C917	B-2
C920	B-3
C921	B-3
C922	D-3
C923	C-3
C926	B-3
CONNECTORS	
CN901	D-3
CN902	D-2
DIODES	
D901	C-2
D902	C-3
D903	D-3
D904	D-2
D905	C-2
D906	C-2
D907	C-2
D908	D-2
D909	B-3
IC	
IC901	A-1
COILS	
L901	C-2
L902	C-3
TRANSISTOR	
Q901	D-3
RESISTORS	
R901	C-1
R902	C-1
R903	C-1
R904	C-2
R905	C-2
R906	B-2
R908	B-2
R911	B-2
R912	B-2
R913	C-2
R914	C-2
R915	C-3
R916	D-3
R918	D-3
R919	C-3
R920	C-3
R921	C-2
R922	C-2
R923	C-2
R924	D-3
R925	D-3
R926	C-2
R927	C-3
CRYSTAL OSCILLATOR	
X901	B-2

UNLESS OTHERWISE SPECIFIED:
DIODES ARE 1SS133(T-77) OR 1N4148.

Text CBA Top View

Text CBA Bottom View

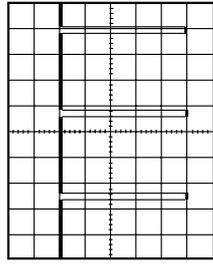


TEXT CBA PARTS LOCATION GUIDE

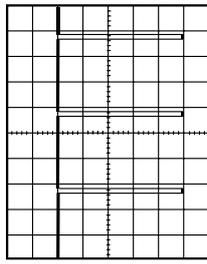
Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		DIODES		RESISTORS		RESISTORS	
C901	A-2	C926	B-1	D908	B-1	R903	A-2	R919	A-1
C902	A-2	CONNECTORS		D909	B-2	R904	A-2	R920	A-1
C903	A-2	CN901	A-1	IC		R905	A-1	R921	B-1
C904	A-2	CN902	B-1	IC901	B-2	R906	A-2	R922	B-1
C905	A-1	DIODES		COILS		R908	A-1	R923	B-1
C906	A-1	D901	B-1	L901	A-1	R911	A-2	R924	B-1
C916	B-1	D902	B-1	L902	B-1	R912	B-1	R925	A-1
C917	B-1	D903	B-1	TRANSISTOR		R913	B-1	R926	B-1
C920	B-1	D904	B-1	Q901	B-1	R914	A-1	R927	A-1
C921	B-1	D905	B-1	RESISTORS		R915	A-1	CRYSTAL OSCILLATOR	
C922	B-1	D906	B-1	R901	A-2	R916	B-1	X901	B-2
C923	B-1	D907	B-1	R902	A-2	R918	B-1		

WAVEFORMS

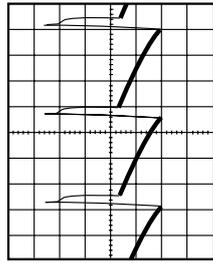
WAVEFORM NOTES
 INPUT: COLOR BAR SIGNAL
 OTHER CONTROLS: CENTER POSITION
 VOLTAGES SHOWN ARE RANGE OF
 OSCILLOSCOPE SETTING



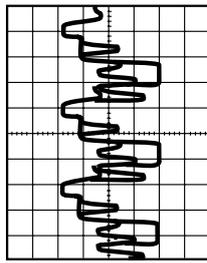
WF17 1DIV: 1V 20µsec
 IC201 PIN 58



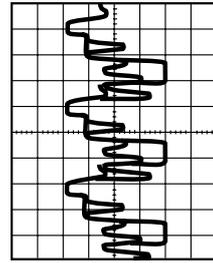
WF18 1DIV: 1V 5msec
 IC201 PIN 59



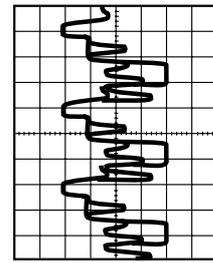
WF13 1DIV: 10V 5msec
 CN551 PIN 5



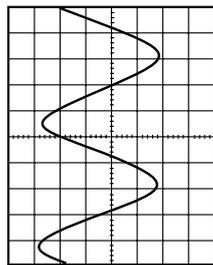
WF14 1DIV: 20V 20µsec
 Q501 COLLECTOR



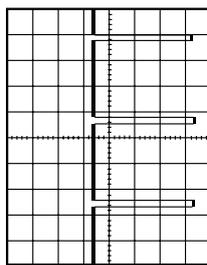
WF15 1DIV: 20V 20µsec
 Q502 COLLECTOR



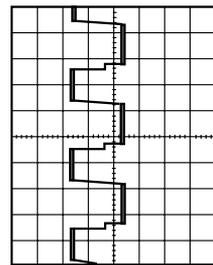
WF16 1DIV: 20V 20µsec
 Q503 COLLECTOR



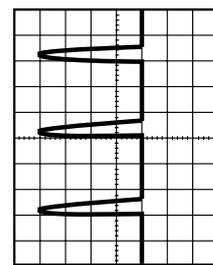
WF9 1DIV: 0.5V 0.5msec
 IC401 PIN 8



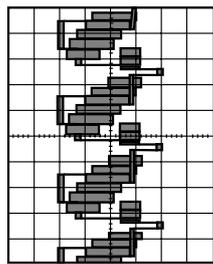
WF10 1DIV: 2V 5msec
 IC301 PIN 13



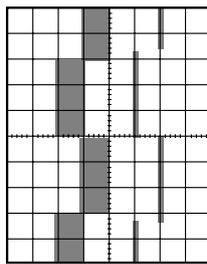
WF11 1DIV: 1V 20µsec
 IC301 PIN7



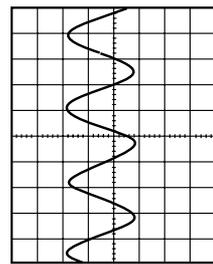
WF12 1DIV: 200V 20µsec
 Q551 COLLECTOR



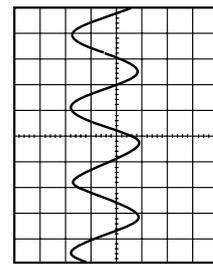
WF5 1DIV: 0.5V 20µsec
 TP003 V-OUT



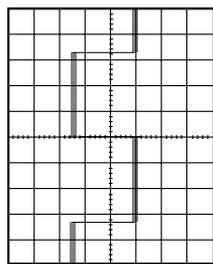
Upper: WF6 Lower: WF1
 1DIV: 0.2V 2DIV: 5V 5msec
 TP008 C-PB



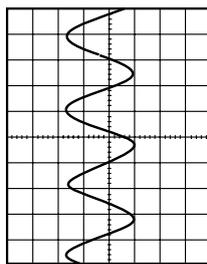
WF7 1DIV: 0.2V 0.5msec
 IC301 PIN 52



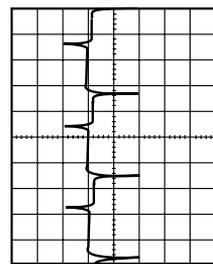
WF8 1DIV: 0.5V 0.5msec
 TP007 N-A-PB



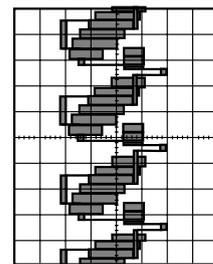
WF1 1DIV: 2V 5msec
 TP002 RF-SW



WF2 1DIV: 0.2V 0.1µsec
 IC401 PIN 29



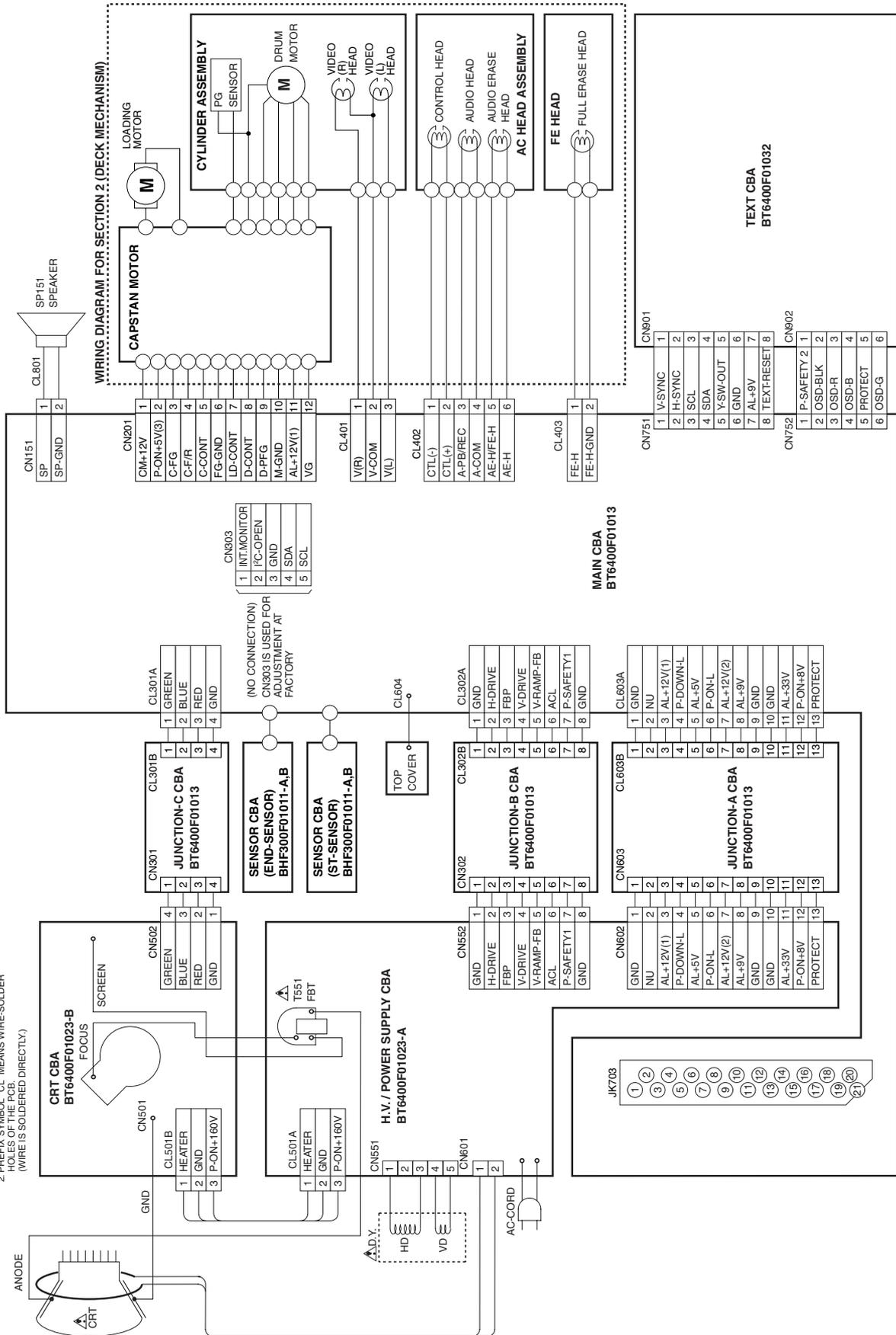
WF3 1DIV: 1V 10msec
 TP001 CTL



WF4 1DIV: 0.25V 20µsec
 IC401 PIN 48

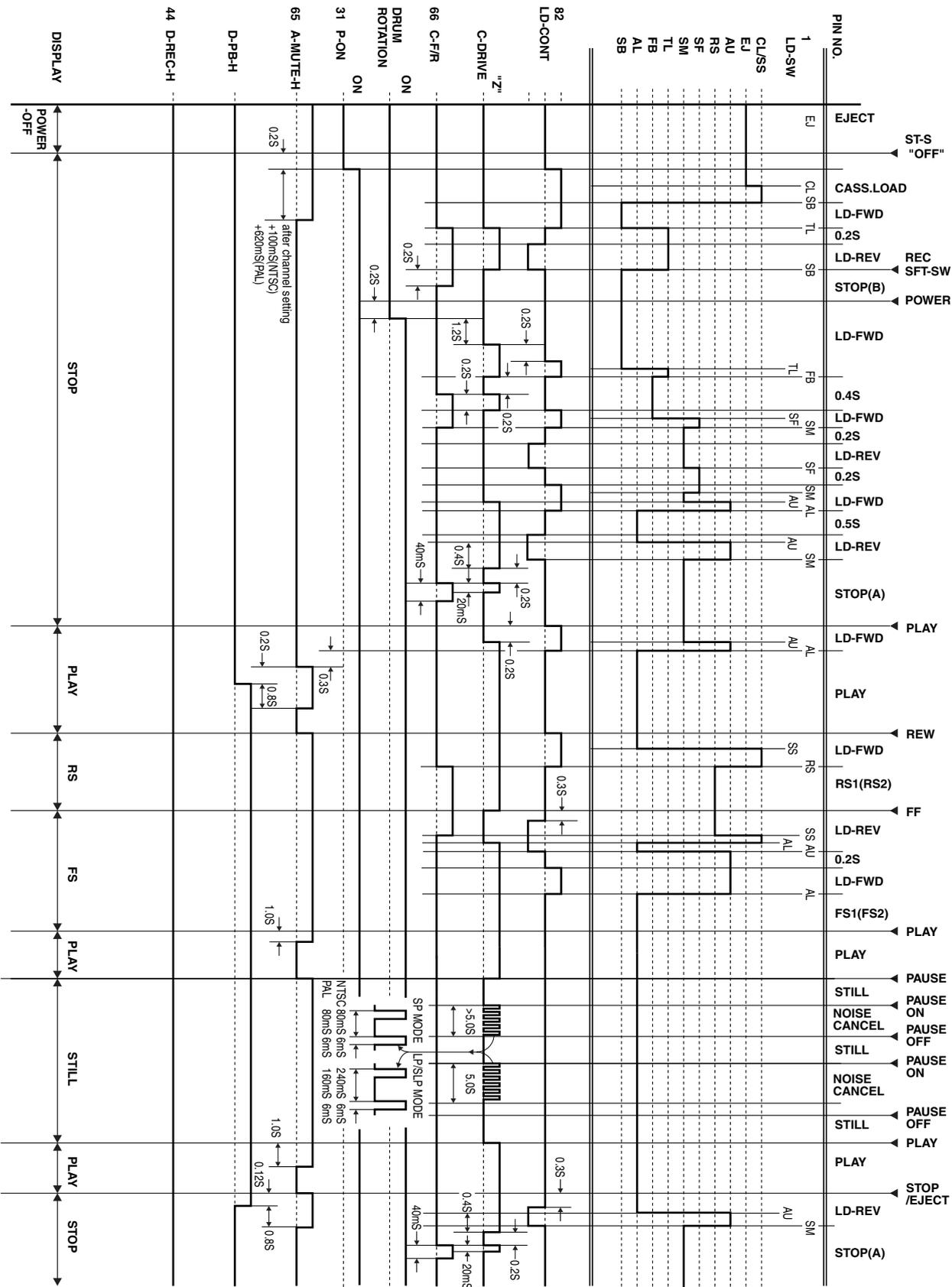
WIRING DIAGRAM

NOTE FOR WIRE CONNECTORS:
 1. PREFIX SYMBOL 'CN' MEANS CONNECTOR. (CAN DISCONNECT AND RECONNECT.)
 2. PREFIX SYMBOL 'CL' MEANS WIRE-SOLDER HOLES OF THE PCB. (WIRE IS SOLDERED DIRECTLY.)



SYSTEM CONTROL TIMING CHARTS

Chart 1



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

IC PIN FUNCTION DESCRIPTIONS

Comparison Chart of Models and Marks

Model	Mark
21PV385/07	A
21PV385/01	B
21PV385/58	C
21PV385/39	D

IC 201 (TV/VCR Micro Controller)

“H” ≥ 4.5V, “L” ≤ 1.0V

Pin No.	Mark	IN/OUT	Signal Name	Function
1		-	NU	Not Used
2		IN	P-SAFETY 2	Power Supply Failure Detection 2
3		IN	P-SAFETY 1	Power Supply Failure Detection 1
4		IN	END-SENS	End-Sensor
5		IN	AFC	Automatic Frequency Control Signal
6		IN	V-ENV	Video Envelope Input
7		IN	KEY-1	Key 1 Input
8		IN	KEY-2	Key 2 Input
9		IN	LD-SW	Loading Switch Input
10		IN	ST-SENS	Start-Sensor
11		-	NU	Not Used
12		-	NU	Not Used
13		IN/OUT	DV SYNC	Artificial V-Sync Output
14		IN	REMOTE	Remote Signal Input
15		OUT	C-ROTA	Color Phase Rotary Changeover Signal
16		OUT	H-A-SW	Video Head Amp Switching Pulse
17		-	NU	Not Used
18		OUT	RF-SW	Video Head Switching Pulse
19		-	NU	Not Used
20		OUT	A-MUTE-H	Audio Mute Control Signal (Mute = “H”)
21		-	NU	Not Used
22		-	NU	Not Used
23		OUT	REC-LED	Recording LED Control Signal
24		OUT	REC-LED	Recording LED Control Signal

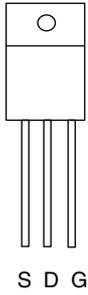
Pin No.	Mark	IN/OUT	Signal Name	Function
25		-	NU	Not Used
26		-	NU	Not Used
27		-	NU	Not Used
28		-	NU	Not Used
29		IN	SCART-MUTE	RAPID-Switch Input Signal from Scart Jack
30		-	NU	Not Used
31		IN	REC-SAFETY	Record Protection Tab Detection
32	A,B,C	-	NU	Not Used
	D	IN	SECAM-H	SECAM Mode at High
33	A,B,C	-	NU	Not Used
	D	OUT	TRICK-H	Special Playback = “H” in SECAM Mode
34		IN	RESET	System Reset Signal (Reset=“L”)
35		IN	XCIN	Sub Clock 32 kHz
36		OUT	XCOU	Sub Clock 32 kHz
37		-	TIMER+5V	Vcc
38		IN	XIN	Main Clock Input
39		OUT	XOUT	Main Clock Output
40		-	GND	GND
41		OUT	SPOT-KILL	Counter-measure for Spot
42		OUT	EXT-L	External Input or Playback = Output
43		IN	CLKSEL	Clock Select (GND)
44		OUT	SP-MUTE	Speaker Mute Signal
45		IN	I2C-OPEN	White Balance Adjust Mode Judgment
46		-	GND	GND
47		OUT	D-REC-H	Delayed Record Signal
48		OUT	SCART-H	Switching Signal of Scart Jack and RCA Jack
49		-	OSD-GND	OSD GND
50		-	NU	Not Used
51		-	NU	Not Used
52		-	NU	Not Used

Pin No.	Mark	IN/OUT	Signal Name	Function
53		-	OSDVcc	OSDVcc
54		-	HLF	HLF
55		OUT	TEXT-RESET	Tele Text Reset
56		IN	CV-IN	Video Signal Input
57		-	GND	GND
58		IN	H-SYNC	H-SYNC Input
59		IN	V-SYNC	V-SYNC Input
60		OUT	OSD-BLK	Output for Picture Cut off
61		OUT	RGB-CONT	RGB Control Signal
62		OUT	OSD-B	Blue Output
63		OUT	OSD-G	Green Output
64		OUT	OSD-R	Red Output
65		IN	RAPIT-SW-IN	RAPID-Switch Input Signal
66		-	NU	Not Used
67		OUT	P-ON-H	Power On Signal at High
68		IN	SLOW-SW-IN	Slow Switch Input Signal
69		-	NU	Not Used
70		OUT	TEXT-IN-H	Tele Text Input Signal at High
71		OUT	SCL	E2PROM/CHROMA IC Tuner Communication Clock
72		IN/OUT	SDA	E2PROM/CHROMA IC Tuner Communication Data
73		-	NU	Not Used
74		IN	C-SYNC	C-Sync Input
75		-	NU	Not Used
76		OUT	C-CONT	Capstan Motor Control Signal
77		OUT	D-CONT	Drum Motor Control Signal
78		OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/REV="H")
79		-	NU	Not Used
80		IN	T-REEL	Take Up Reel Rotation Signal
81		OUT	LD-CONT	Loading Motor Control Signal
82		OUT	TEXT-L	Teletext Control Signal

Pin No.	Mark	IN/OUT	Signal Name	Function
83		-	NU	Not Used
84		-	NU	Not Used
85		OUT	P-DOWN-L	Power Voltage Down Detector Signal at Low
86		-	NU	Not Used
87		IN	C-FG	Capstan Motor Rotation Detection Pulse
88		-	AMPVss	AMPVss (GND)
89		-	NU	Not Used
90		IN	D-PFG	Drum Motor Phase/Frequency Generator
91		OUT	AMP VREF-OUT	Standard Voltage Output
92		IN	AMP VREF-IN	Standard Voltage Input
93		-	C	C Terminal
94		IN/OUT	CTL (-)	CTL (-)
95		IN/OUT	CTL (+)	CTL (+)
96		-	AMPC	AMPC
97		OUT	CTL AMP-OUT	Control Amp Output
98		-	AMPVcc	AMPVcc
99		-	AVcc	A/D Converter Power Input/Standard Voltage Input
100		IN	AGC	Tuner IF Output Signal

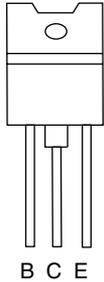
LEAD IDENTIFICATIONS

2SK2647



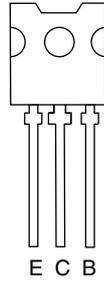
S: Souce
D: Drain
G: Gate

2SC5885000RF
TT2140LS-YB11

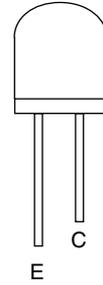


E: Emitter
C: Collector
B: Base

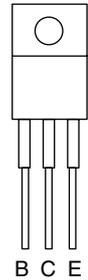
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KTC3503Y



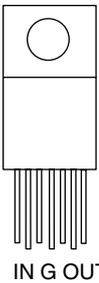
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PT204-6B-12



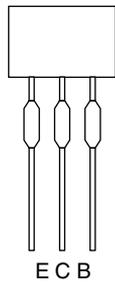
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KTC2026Y



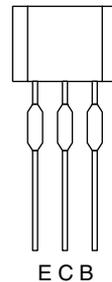
LA78040A



IN G OUT

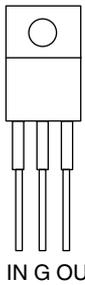


2SA1346
2SC1815-GR(TPE2)
2SC2120-O(TPE2)
2SC2120-Y(TPE2)
2SC3331(T,U)
KRA103M
KTA1266(GR)
KTC3203(Y)



2SA1015-GR(TPE2)
2SA1175(F)
2SA950(Y,O)
2SC1627Y-TPE2
2SC2785(F,H,J)
2SD2627LS-FEC-YB11
BN1F4M-T
KTA1267(GR)
KTA1271(Y)
KTC3198(GR)
KTC3199(GR)

KA7805A
KIA7805API

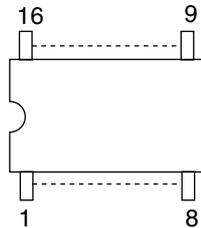


IN G OUT

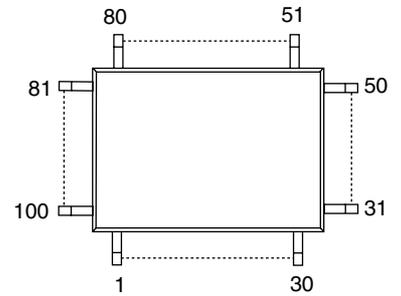
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PS2561L1-1-VW



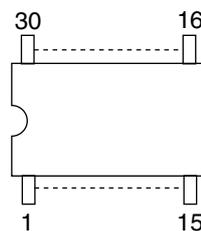
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CD4053BNSR
TC4053BF(N)



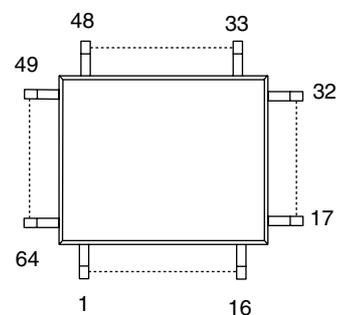
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M37762MCA-BA8GP



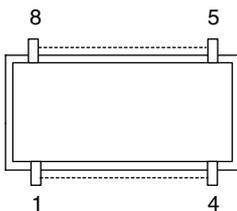
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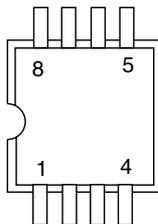
M61209BFP



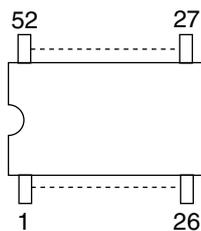
LA4224



AT24C04N-10SC
BR24C04F
BR24C04F-W
BR24L04F-WE2
CAT24WC04JI
M24C04-MN6
M24C04-WMN6



SAA5265



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

NOTES:

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

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
			MMA CBA	1	1	1	1
			Consists of the following	1	1	1	1
			MAIN CBA	1	1	1	1
			JUNCTION A CBA	1	1	1	1
			JUNCTION B CBA	1	1	1	1
			JUNCTION C CBA	1	1	1	1
			SENSOR CBA	1	1	1	1
			POWER CBA	1	1	1	1
			TEXT CBA	1	1	1	1
MAIN CBA							
CAPACITORS							
C001			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C002			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C006		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C007			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C008		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C009			PCB JUMPER D0.6-P5.0	1	1	1	1
C012			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C151			ELECTROLYTIC CAP. 330UF/16V M	1	1	1	1
C152			CERAMIC CAP.(AX) X M 2200PF/16V	1	1	1	1
C154			ELECTROLYTIC CAP. 470UF/16V M	1	1	1	1
C155			ELECTROLYTIC CAP. 0.22UF/50V M H7	1	1	1	1
C156			CHIP CERAMIC CAP. B K 4700PF/50V	1	1	1	1
C157			ELECTROLYTIC CAP. 10UF/25V M H7	1	1	1	1
C160			CHIP CERAMIC CAP. CH J 270PF/50V	1	1	1	1
C203			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C205			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C207			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C208			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C209			CHIP CERAMIC CAP. CH J 22PF/50V	1	1	1	1
C210			CHIP CERAMIC CAP. CH J 22PF/50V	1	1	1	1
C211			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C212			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C213			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C214			ELECTROLYTIC CAP. 330UF/6.3V M	1	1	1	1
C217			CHIP CERAMIC CAP. CH D 10PF/50V	1	1	1	1
C218			CHIP CERAMIC CAP. CH D 10PF/50V	1	1	1	1
C221			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
C222			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C223			CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	1	1	1	1
C224			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C225			CHIP CERAMIC CAP. CH J 560PF/50V	1	1	1	1
C226			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C227			CHIP CERAMIC CAP. CH D 10PF/50V	1	1	1	1
C228			CHIP CERAMIC CAP. CH D 10PF/50V	1	1	1	1
C229			CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	1	1	1	1
C230			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C231			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C233			CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V	1	1	1	1
C234			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C235			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C236			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C237			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C238			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C239			CHIP CERAMIC CAP. CH J 560PF/50V	1	1	1	1
C240			CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	1	1	1	1
C241			ELECTROLYTIC CAP. 22UF/50V M	1	1	1	1
C242			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C243			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C244			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C245			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C248			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C253			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C254			CHIP CERAMIC CAP. CH J 560PF/50V	1	1	1	1
C255			CHIP CERAMIC CAP. CH J 560PF/50V	1	1	1	1
C256			ELECTROLYTIC CAP. 10UF/25V M H7	1	1	1	1
C301			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C302			ELECTROLYTIC CAP. 1000UF/6.3V M	1	1	1	1
C303			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C304			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C305		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C307			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C308			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C309			FILM CAP.(P) 0.1UF/50V J	1	1	1	1
C310			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C311			ELECTROLYTIC CAP. 1000UF/6.3V M	1	1	1	1
C312		9965 000 23541	CHIP CERAMIC CAP.(MELF) B K 180PF/50V	1	1	1	1
C313			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C314			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C315			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C316		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C317			CHIP CERAMIC CAP. CH J 150PF/50V	1	1	1	1
C318		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C319		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C320			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C321		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C322			ELECTROLYTIC CAP. 470UF/10V M	1	1	1	1
C323			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C324			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C325			MYLAR CAP. 0.22UF/50V J	1	1	1	1
C326		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
C327			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C328			MYLAR CAP. 0.22UF/50V J	1	1	1	1
C330			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C331			ELECTROLYTIC CAP. 47UF/10V M	1	1	1	1
C332			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C333			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C334			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C336			ELECTROLYTIC CAP. 47UF/10V M	1	1	1	1
C338			CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V	1	1	1	1
C339			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C340		9965 000 23541	CHIP CERAMIC CAP.(MELF) B K 180PF/50V	1	1	1	1
C341			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C344			CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V	1	1	1	1
C350			ELECTROLYTIC CAP. 220UF/10V M	1	1	1	1
C401			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C402			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C403			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C404			ELECTROLYTIC CAP. 100UF/6.3V H7	1	1	1	1
C405			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C406			CHIP CERAMIC CAP. B K 0.047UF/50V	1	1	1	1
C407			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C408			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C409			CHIP CERAMIC CAP. B K 0.047UF/50V	1	1	1	1
C410			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C411			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C412			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C413			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C414			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C415			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C416			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C417			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C418			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C419			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C420			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C421			ELECTROLYTIC CAP. 10UF/25V M H7	1	1	1	1
C424			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C425			CHIP CERAMIC CAP. CH J 68PF/50V	1	1	1	1
C426			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C427			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C430			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C431			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C432			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C433			ELECTROLYTIC CAP. 10UF/25V M H7	1	1	1	1
C434			ELECTROLYTIC CAP. 22UF/16V M H7	1	1	1	1
C435			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C436			CHIP CERAMIC CAP. CH J 120PF/50V	1	1	1	1
C438			CHIP CERAMIC CAP. CH J 220PF/50V	1	1	1	1
C440			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C441			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C442			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C443			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C444			CHIP CERAMIC CAP. B K 2200PF/50V	1	1	1	1
C445			ELECTROLYTIC CAP. 10UF/25V M H7	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
C452			CHIP CERAMIC CAP. CH J 68PF/50V	1	1	1	1
C471			CHIP CERAMIC CAP. B K 0.01UF/50V				1
C472			CHIP CERAMIC CAP. B K 0.01UF/50V				1
C473			CHIP CERAMIC CAP. F Z 0.1UF/50V				1
C474			CHIP CERAMIC CAP. F Z 0.1UF/50V				1
C475			CHIP CERAMIC CAP. F Z 0.1UF/50V				1
C476			CHIP CERAMIC CAP. B K 0.01UF/50V				1
C478			CHIP CERAMIC CAP. F Z 0.1UF/50V				1
C479			CHIP CERAMIC CAP. B K 0.01UF/50V				1
C480			CHIP CERAMIC CAP. B K 0.01UF/50V				1
C481			ELECTROLYTIC CAP. 0.47UF/50V M H7				1
C483			CHIP CERAMIC CAP. F Z 0.1UF/50V				1
C484			CHIP CERAMIC CAP. CH J 820PF/50V				1
C485			CHIP CERAMIC CAP. CH J 820PF/50V				1
C486			ELECTROLYTIC CAP. 2.2UF/50V M H7				1
C681			ELECTROLYTIC CAP. 1000UF/16V M	1	1	1	1
C682			ELECTROLYTIC CAP. 1000UF/16V M	1	1	1	1
C683	▲	9965 000 14852	ELECTROLYTIC CAP. 10UF/50V M	1	1	1	1
C684	▲	9965 000 23541	CHIP CERAMIC CAP.(MELF) B K 180PF/50V	1	1	1	1
C687			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C688			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C689			ELECTROLYTIC CAP. 470UF/10V M	1	1	1	1
C691			ELECTROLYTIC CAP. 2.2UF/50V M	1	1	1	1
C692			CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	1	1	1	1
C694			ELECTROLYTIC CAP. 1000UF/6.3V M	1	1	1	1
C699			ELECTROLYTIC CAP. 470UF/6.3V M	1	1	1	1
C701			CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	1	1	1	1
C703			ELECTROLYTIC CAP. 4.7UF/50V M	1	1	1	1
C705			CERAMIC CAP.(AX) X M 4700PF/16V	1	1	1	1
C706			CERAMIC CAP.(AX) X M 4700PF/16V	1	1	1	1
C707			ELECTROLYTIC CAP. 0.22UF/50V M	1	1	1	1
C708			ELECTROLYTIC CAP. 0.47UF/50V M	1	1	1	1
C709			ELECTROLYTIC CAP. 0.47UF/50V M	1	1	1	1
C710			ELECTROLYTIC CAP. 0.47UF/50V M	1	1	1	1
C711			ELECTROLYTIC CAP. 470UF/10V M	1	1	1	1
C713			ELECTROLYTIC CAP. 100UF/10V M	1	1	1	1
C714			CHIP CERAMIC CAP. CH J 270PF/50V	1	1	1	1
C715			ELECTROLYTIC CAP. 4.7UF/50V M	1	1	1	1
C716			CHIP CERAMIC CAP. B K 0.047UF/50V	1	1	1	1
C719		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C723			CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V	1	1	1	1
C724			ELECTROLYTIC CAP. 47UF/10V M	1	1	1	1
C851			ELECTROLYTIC CAP. 47UF/6.3V M H7	1	1	1	1
C855			ELECTROLYTIC CAP. 220UF/6.3V M H7	1	1	1	1
C856			CERAMIC CAP. B K 470PF/100V	1	1	1	1
C857			FILM CAP.(P) 0.018UF/100V J	1	1	1	1
C858			CHIP CERAMIC CAP. B K 2200PF/50V	1	1	1	1
C859			CHIP CERAMIC CAP.(MELF) SL J 33PF/50V	1	1	1	1
C860			PCB JUMPER D0.6-P5.0	1	1	1	1
C861			CERAMIC CAP.(AX) X M 1800PF/16V	1	1	1	1
C862			ELECTROLYTIC CAP. 10UF/25V M H7	1	1	1	1
C863			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C864			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
C865			CHIP CERAMIC CAP. B K 0.022UF/50V	1	1	1	1
C866			ELECTROLYTIC CAP. 33UF/10V H7	1	1	1	1
C867			ELECTROLYTIC CAP. 4.7UF/50V M H7	1	1	1	1
C868			CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	1	1	1	1
C869			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C871		9965 000 23541	CHIP CERAMIC CAP.(MELF) B K 180PF/50V	1	1	1	1
C872			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
C874			CHIP CERAMIC CAP. F Z 0.1UF/50V	1	1	1	1
C875			CHIP CERAMIC CAP. CH J 220PF/50V	1	1	1	1
C876			CHIP CERAMIC CAP. B K 0.01UF/50V	1	1	1	1
C877			ELECTROLYTIC CAP. 100UF/6.3V H7	1	1	1	1
CONNECTORS							
CL301A		9965 000 18158	LEAD WIRE 4P/450	1	1	1	1
CL302A		9965 000 18159	LEAD WIRE 8P/280	1	1	1	1
CL603A		9965 000 18116	LEAD WIRE 13P/190	1	1	1	1
CL604		9965 000 18088	WIRE ASSEMBLY 1P/45	1	1	1	1
CN151		9965 000 13844	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	1	1	1	1
CN201		9965 000 13840	FFC/FPC CONNECTOR, 12P 04 6232 112 103 800	1	1	1	1
CN303		9965 000 13841	CONNECTOR BASE, 5P TUC-P05P-B1	1	1	1	1
CN751		9965 000 13842	CONNECTOR BASE, 8P TUC-P08P-B1	1	1	1	1
CN752		9965 000 13843	CONNECTOR BASE, 6P TUC-P06P-B1	1	1	1	1
DIODES							
D151	▲	9965 000 13848	ZENER DIODE MTZJT-777.5B	1	1	1	1
D152	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D201		9965 000 05250	LED SIR-563ST3F P	1	1	1	1
D202		9965 000 13846	LED(RED) L-1513EC	1	1	1	1
D204		9965 000 13846	LED(RED) L-1513EC	1	1	1	1
D205		4822 130 33948	ZENER DIODE MTZJT-775.6B	1	1	1	1
D206			PCB JUMPER D0.6-P5.0	1	1	1	1
D210		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D211		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D212		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D213		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D214		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D302		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D303		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D304		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D305		9965 000 11153	ZENER DIODE MTZJT-778.2B	1	1	1	1
D306		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D401	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D402		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D471		4822 130 32778	SWITCHING DIODE 1SS133(T-77)				1
D682	▲		PCB JUMPER D0.6-P10.0	1	1	1	1
D686		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D687		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D688	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D690	▲	9965 000 13848	ZENER DIODE MTZJT-777.5B	1	1	1	1
D691	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D693	▲	9965 000 18090	ZENER DIODE MTZJT-776.2A	1	1	1	1
D694		9965 000 18091	ZENER DIODE MTZJT-7715B	1	1	1	1
D706		9965 000 12904	ZENER DIODE DZ-5.1BSBT265	1	1	1	1
D711		4822 130 33948	ZENER DIODE MTZJT-775.6B	1	1	1	1
D712		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
D713		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D715		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D716		4822 130 33948	ZENER DIODE MTZJT-775.6B	1	1	1	1
IC's							
IC151	▲	9965 000 13853	AUDIO AMP LA4224	1	1	1	1
IC201	▲	9965 000 23542	MICRO COMPUTER M37762MCA-BA8GP	1	1	1	1
IC202	▲	9965 000 13030	IC:MEMORY BR24C04F-W	1	1	1	1
IC301	▲	9965 000 18093	IC:CHROMA/IF 1 CHIP M61209BFP	1	1	1	1
IC401	▲	9965 000 12180	IC:Y/C/A LA71750EM-MPB-E	1	1	1	1
IC471	▲	9965 000 12255	IC:SECAM LA70100M-MPB				1
IC681	▲	9965 000 13851	VOLTAGE REGULATOR KIA7805API	1	1	1	1
IC701	▲	9965 000 13852	IC:SWITCH TC4053BF(N)	1	1	1	1
IC703	▲	9965 000 13852	IC:SWITCH TC4053BF(N)	1	1	1	1
COILS							
L001			PCB JUMPER D0.6-P5.0	1	1	1	1
L151		9965 000 18094	INDUCTOR 1.8UH-J-26T	1	1	1	1
L152		9965 000 13856	INDUCTOR 1.0UH-J-26T	1	1	1	1
L201		9965 000 13857	INDUCTOR 0.10UH-K-26T	1	1	1	1
L302		9965 000 13858	INDUCTOR 33UH-J-26T	1	1	1	1
L303			PCB JUMPER D0.6-P7.5	1	1	1	1
L304			PCB JUMPER D0.6-P7.5	1	1	1	1
L305			PCB JUMPER D0.6-P5.0	1	1	1	1
L401		9965 000 13859	INDUCTOR 22UH-J-26T	1	1	1	1
L402		9965 000 13858	INDUCTOR 33UH-J-26T	1	1	1	1
L403		9965 000 13893	INDUCTOR 100UH-J-26T	1	1	1	1
L681		9965 000 05627	CHOKE COIL 47UH-K	1	1	1	1
L682			PCB JUMPER D0.6-P7.5	1	1	1	1
L701		9965 000 13860	INDUCTOR 12UH-J-26T	1	1	1	1
L702		9965 000 13861	INDUCTOR 1.2UH-J-26T	1	1	1	1
L852		9965 000 05705	INDUCTOR 47UH-K-5FT	1	1	1	1
L854		9965 000 18095	INDUCTOR 0.22UH-K-26T	1	1	1	1
TRANSISTORS							
Q204		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q205		9965 000 20922	PHOTO TRANSISTOR MID-32A22F	1	1	1	1
Q206		4822 130 10145	RES. BUILT-IN TRANSISTOR KRA103M	1	1	1	1
Q401		4822 130 42959	TRANSISTOR KTA1266(GR)	1	1	1	1
Q682		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q684	▲	4822 130 42292	TRANSISTOR 2SC2120-Y(TPE2)	1	1	1	1
Q685	▲	9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q686	▲	9965 000 13863	TRANSISTOR 2SD1913(R)	1	1	1	1
Q701		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q702		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q703		4822 130 42959	TRANSISTOR KTA1266(GR)	1	1	1	1
Q704		4822 130 10145	RES. BUILT-IN TRANSISTOR KRA103M	1	1	1	1
Q705		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q706		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q707		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q708		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q709		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q710		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q711		4822 130 42959	TRANSISTOR KTA1266(GR)	1	1	1	1
Q851		4822 130 10145	RES. BUILT-IN TRANSISTOR KRA103M	1	1	1	1
Q852		4822 130 10097	TRANSISTOR 2SC3331(T)	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
Q853		4822 130 10097	TRANSISTOR 2SC3331(T)	1	1	1	1
Q854		4822 130 42959	TRANSISTOR KTA1266(GR)	1	1	1	1
Q855		4822 130 42292	TRANSISTOR 2SC2120-Y(TPE2)	1	1	1	1
Q856		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q857	▲	9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
RESISTORS							
R003		9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R004		9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R005			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R006			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R151			METAL OXIDE FILM RES. 1W J 12 OHM	1	1	1	1
R152			CHIP RES.(1608) 1/10W J 5.6K OHM	1	1	1	1
R153			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R154			CHIP RES.(1608) 1/10W J 5.6K OHM	1	1	1	1
R155			CARBON RES. 1/4W J 47 OHM	1	1	1	1
R156			CARBON RES. 1/4W J 47 OHM	1	1	1	1
R201		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R202		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R203		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R204		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R205		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R206			CHIP RES.(1608) 1/10W J 390K OHM	1	1	1	1
R207			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R208			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R209			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R210			CARBON RES. 1/4W G 4.7K OHM	1	1	1	1
R211			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R212			CHIP RES.(1608) 1/10W J 2.7K OHM	1	1	1	1
R213			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R214			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R215			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R216			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R217			CHIP RES.(1608) 1/10W J 2.7K OHM	1	1	1	1
R218			CHIP RES.(1608) 1/10W J 560 OHM	1	1	1	1
R219		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R220			CHIP RES.(1608) 1/10W J 390K OHM	1	1	1	1
R221			CARBON RES. 1/4W J 270 OHM	1	1	1	1
R222		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R223			CHIP RES.(1608) 1/10W J 680 OHM	1	1	1	1
R224			CHIP RES.(1608) 1/10W J 680 OHM	1	1	1	1
R226			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R227			CHIP RES.(1608) 1/10W J 47 OHM	1	1	1	1
R228			CHIP RES.(1608) 1/10W J 100K OHM	1	1	1	1
R229			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R230			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R231			CHIP RES.(1608) 1/10W J 330K OHM	1	1	1	1
R232			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R233			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R234			CHIP RES.(1608) 1/10W J 560 OHM	1	1	1	1
R235			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R236			CHIP RES.(1608) 1/10W J 470 OHM	1	1	1	1
R237			CHIP RES.(1608) 1/10W J 1M OHM	1	1	1	1
R238		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
R239			PCB JUMPER D0.6-P5.0	1	1	1	1
R240			PCB JUMPER D0.6-P5.0	1	1	1	1
R241			CHIP RES.(1608) 1/10W J 220 OHM	1	1	1	1
R242			CHIP RES.(1608) 1/10W J 220 OHM	1	1	1	1
R243			CHIP RES.(1608) 1/10W J 39K OHM	1	1	1	1
R244			CHIP RES.(1608) 1/10W J 220K OHM	1	1	1	1
R248		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R249			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R250			CHIP RES.(1608) 1/10W J 33K OHM	1	1	1	1
R254			CHIP RES.(1608) 1/10W J 100K OHM	1	1	1	1
R255			CHIP RES.(1608) 1/10W J 680 OHM	1	1	1	1
R256			CHIP RES.(1608) 1/10W J 1.8K OHM	1	1	1	1
R257			CARBON RES. 1/4W J 6.8K OHM	1	1	1	1
R258		9965 000 19513	CARBON RES. 1/4W J 47K OHM	1	1	1	1
R259			PCB JUMPER D0.6-P5.0	1	1	1	1
R260			CARBON RES. 1/4W G 1.5K OHM	1	1	1	1
R261			CARBON RES. 1/4W G 22K OHM	1	1	1	1
R262			CARBON RES. 1/4W G 470 OHM	1	1	1	1
R263			CARBON RES. 1/4W G 10K OHM	1	1	1	1
R264			CARBON RES. 1/4W G 3.6K OHM	1	1	1	1
R265			PCB JUMPER D0.6-P5.0	1	1	1	1
R266			PCB JUMPER D0.6-P5.0	1	1	1	1
R267			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R268			CHIP RES.(1608) 1/10W J 3.3K OHM	1	1	1	1
R269			CHIP RES.(1608) 1/10W J 3.3K OHM	1	1	1	1
R270		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R271			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R272			CHIP RES.(1608) 1/10W J 18K OHM	1	1	1	1
R273			CHIP RES.(1608) 1/10W J 18K OHM	1	1	1	1
R274			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R275			CHIP RES.(1608) 1/10W J 560 OHM	1	1	1	1
R276			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R277			CHIP RES.(1608) 1/10W J 560 OHM	1	1	1	1
R278			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R279			CHIP RES.(1608) 1/10W J 560 OHM	1	1	1	1
R280			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R281			CHIP RES.(1608) 1/10W J 3.3K OHM	1	1	1	1
R282			CARBON RES. 1/4W J 330 OHM	1	1	1	1
R287			CHIP RES.(1608) 1/10W J 470 OHM	1	1	1	1
R288			CHIP RES.(1608) 1/10W J 10 OHM	1	1	1	1
R289			CHIP RES.(1608) 1/10W J 10 OHM	1	1	1	1
R301			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R302			CHIP RES.(1608) 1/10W J 8.2K OHM	1	1	1	1
R303		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R304			CHIP RES.(1608) 1/10W J 1.8K OHM	1	1	1	1
R305			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R306		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R307			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R308		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R309			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R310			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R311			CARBON RES. 1/4W J 12 OHM	1	1	1	1
R312		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
R313			CHIP RES.(1608) 1/10W J 220K OHM	1	1	1	1
R314			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R315			CHIP RES.(1608) 1/10W J 150K OHM	1	1	1	1
R316		9965 000 19518	CARBON RES. 1/4W J 15K OHM	1	1	1	1
R317			CARBON RES. 1/4W J 220K OHM	1	1	1	1
R318			CHIP RES.(1608) 1/10W J 6.8K OHM	1	1	1	1
R320			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R321			CHIP RES.(1608) 1/10W J 220 OHM	1	1	1	1
R322			CHIP RES.(1608) 1/10W J 3.3K OHM	1	1	1	1
R323			CHIP RES.(1608) 1/10W J 15K OHM	1	1	1	1
R324			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R325			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R326			CHIP RES.(1608) 1/10W J 6.8K OHM	1	1	1	1
R327			PCB JUMPER D0.6-P5.0	1	1	1	1
R328			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R332		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R333		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R334		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R335		9965 000 19520	CARBON RES. 1/4W J 100 OHM	1	1	1	1
R336			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R339			CHIP RES.(1608) 1/10W 0 OHM	1	1	1	1
R340			CHIP RES.(1608) 1/10W 0 OHM	1	1	1	1
R401			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R402			CHIP RES.(1608) 1/10W J 8.2K OHM	1	1	1	1
R405			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R406			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R407			CHIP RES.(1608) 1/10W J 390K OHM	1	1	1	1
R408			CHIP RES.(1608) 1/10W J 330 OHM	1	1	1	1
R409			CHIP RES.(1608) 1/10W J 330 OHM	1	1	1	1
R410			CHIP RES.(1608) 1/10W J 220 OHM	1	1	1	1
R411			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R412			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R413			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R414			CHIP RES.(1608) 1/10W J 6.8K OHM	1	1	1	1
R415			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R416			CHIP RES.(1608) 1/10W J 1.2K OHM	1	1	1	1
R417			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R418			CHIP RES.(1608) 1/10W J 56K OHM	1	1	1	1
R420			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R422			CHIP RES.(1608) 1/10W J 120 OHM	1	1	1	1
R423			CHIP RES.(1608) 1/10W J 47 OHM	1	1	1	1
R424			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R425			CHIP RES.(1608) 1/10W 0 OHM	1	1	1	1
R426			CHIP RES.(1608) 1/10W 0 OHM	1	1	1	1
R471			CHIP RES.(1608) 1/10W J 2.2K OHM				1
R683			METAL OXIDE FILM RES. 1W J 2.2 OHM	1	1	1	1
R684			CHIP RES.(1608) 1/10W J 10 OHM	1	1	1	1
R685			CARBON RES. 1/4W J 6.8K OHM	1	1	1	1
R686			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R690	▲	4822 053 10229	METAL OXIDE FILM RES. 1W J 22 OHM	1	1	1	1
R691	▲	9965 000 23543	METAL OXIDE FILM RES. 1W J 5.6 OHM	1	1	1	1
R692			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R693	▲	9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
R694	▲	9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R696			METAL OXIDE FILM RES. 1W J 2.2 OHM	1	1	1	1
R697			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R698			CHIP RES.(1608) 1/10W J 8.2K OHM	1	1	1	1
R701			CHIP RES.(1608) 1/10W J 75 OHM	1	1	1	1
R702			CHIP RES.(1608) 1/10W J 1.5K OHM	1	1	1	1
R703		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R704			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R705			CHIP RES.(1608) 1/10W J 2.7K OHM	1	1	1	1
R707			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R709			CHIP RES.(1608) 1/10W J 75 OHM	1	1	1	1
R710			CHIP RES.(1608) 1/10W J 33K OHM	1	1	1	1
R711			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R712			CARBON RES. 1/4W J 4.7K OHM	1	1	1	1
R714			CHIP RES.(1608) 1/10W J 75 OHM	1	1	1	1
R723			CHIP RES.(1608) 1/10W J 75 OHM	1	1	1	1
R724			CHIP RES.(1608) 1/10W J 33K OHM	1	1	1	1
R725			CARBON RES. 1/4W J 75 OHM	1	1	1	1
R726			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R727		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R728		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R729			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R730			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R731		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R732			CARBON RES. 1/4W J 75 OHM	1	1	1	1
R733		9965 000 22688	CARBON RES. 1/4W J 390 OHM	1	1	1	1
R734			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R735			CHIP RES.(1608) 1/10W J 3.3K OHM	1	1	1	1
R736			CARBON RES. 1/4W J 750 OHM	1	1	1	1
R737			CHIP RES.(1608) 1/10W J 75 OHM	1	1	1	1
R738			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R739			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R740			CHIP RES.(1608) 1/10W J 33K OHM	1	1	1	1
R741			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R742			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R743			CHIP RES.(1608) 1/10W J 6.2K OHM	1	1	1	1
R744			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R745			CHIP RES.(1608) 1/10W J 6.2K OHM	1	1	1	1
R746			CHIP RES.(1608) 1/10W J 47K OHM	1	1	1	1
R747			CHIP RES.(1608) 1/10W J 6.2K OHM	1	1	1	1
R748			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R749			CHIP RES.(1608) 1/10W J 10K OHM	1	1	1	1
R750			CHIP RES.(1608) 1/10W J 2.7K OHM	1	1	1	1
R751			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R752			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R753		9965 000 22664	CARBON RES. 1/4W J 2.2K OHM	1	1	1	1
R754		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R755			CHIP RES.(1608) 1/10W J 470 OHM	1	1	1	1
R756			CHIP RES.(1608) 1/10W J 1K OHM	1	1	1	1
R757			CHIP RES.(1608) 1/10W J 1M OHM	1	1	1	1
R851			CHIP RES.(1608) 1/10W J 5.6K OHM	1	1	1	1
R852		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R853			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
R854			CHIP RES.(1608) 1/10W J 2.2K OHM	1	1	1	1
R856		9965 000 19513	CARBON RES. 1/4W J 47K OHM	1	1	1	1
R857		9965 000 19520	CARBON RES. 1/4W J 100 OHM	1	1	1	1
R858		9965 000 19514	CARBON RES. 1/4W J 820 OHM	1	1	1	1
R859			CHIP RES.(1608) 1/10W J 680 OHM	1	1	1	1
R860		9965 000 23544	CHIP RES.(1608) 1/10W J 22K OHM	1	1	1	1
R861			CHIP RES.(1608) 1/10W J 330K OHM	1	1	1	1
R862			CHIP RES.(1608) 1/10W J 12K OHM	1	1	1	1
R863			CHIP RES.(1608) 1/10W J 120 OHM	1	1	1	1
R864			CHIP RES.(1608) 1/10W J 560 OHM	1	1	1	1
R865			CHIP RES.(1608) 1/10W J 1.8K OHM	1	1	1	1
R866			CHIP RES.(1608) 1/10W J 12K OHM	1	1	1	1
R867		9965 000 23545	CHIP RES.(1608) 1/10W J 100 OHM	1	1	1	1
R869			CHIP RES.(1608) 1/10W J 3.3K OHM	1	1	1	1
R870			CHIP RES.(1608) 1/10W J 56K OHM	1	1	1	1
R871			CHIP RES.(1608) 1/10W J 1M OHM	1	1	1	1
R874			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R876			CHIP RES.(1608) 1/10W J 4.7K OHM	1	1	1	1
R877			CHIP RES.(1608) 1/10W J 15K OHM	1	1	1	1
R878			CHIP RES.(1608) 1/10W J 12K OHM	1	1	1	1
R879			CHIP RES.(1608) 1/10W J 5.6K OHM	1	1	1	1
R884		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
SWITCHES							
SW201		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW202		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW203		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW204		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW205		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW206		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW207		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW208		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW209		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW210		9965 000 14390	TACT SWITCH SKQNAED010	1	1	1	1
SW211		9965 000 12192	LEAF SWITCH MXS00052MPP0	1	1	1	1
SW212		9965 000 16626	ROTARY MODE SWITCH SSS-50MD	1	1	1	1
MISCELLANEOUS							
TU001		3143 027 10191	TUN IF V+U PLL IEC BGDKI 03	1	1		1
TU001		3143 027 10201	TUN IF V+U PLL IEC BGDKIL 03			1	
..2		3143 021 00041	DEG COIL FUNAI 21"	1	1	1	1
		3143 021 00051	GROUND WIRE 21"	1	1	1	1
		2422 070 98218	MAINSCORD UK 5A 1M8 BK B		1		
		2422 070 98211	MAINSCORD EUR 2A5 1M7 JH BK B	1		1	1
J418F3		9965 000 05627	CHOKE COIL 47UH-K	1	1	1	1
JK151		9965 000 13855	HEADPHONE JACK MSJ-035-10A B	1	1	1	1
JK701		9965 000 18160	RCA JACK(YELLOW) MTJ-032-05B-20	1	1	1	1
JK702		9965 000 18161	RCA JACK(WHITE) MTJ-032-05B-22	1	1	1	1
JK703		9965 000 13854	SKIRT JACK 21P HRC-21V-02P	1	1	1	1
RS201		9965 000 18162	REMOCON RECEIVE UNIT PIC-37042SR	1	1	1	1
TB3		9965 000 18113	HEAD SHIELD S T6400RA	1	1	1	1
TB7		9965 000 18114	LED HOLDER T6400RA	1	1	1	1
TB21		9965 000 08566	BUSH, LED(F) H3700UD	1	1	1	1
TB31		9965 000 18163	HEAD SHIELD COVER T6500RA	1	1	1	1
TP001			PCB JUMPER D0.6-P12.5	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
TP002			PCB JUMPER D0.6-P12.5	1	1	1	1
TP003			PCB JUMPER D0.6-P12.5	1	1	1	1
TP006			PCB JUMPER D0.6-P10.0	1	1	1	1
TP007			PCB JUMPER D0.6-P10.0	1	1	1	1
TP008			PCB JUMPER D0.6-P12.5	1	1	1	1
TP009			PCB JUMPER D0.6-P12.5	1	1	1	1
TP010			PCB JUMPER D0.6-P22.5	1	1	1	1
X201		9965 000 09200	X'TAL 32.768KHZ(20PPM)	1	1	1	1
X202		9965 000 12194	X'TAL 12.000MHZ	1	1	1	1
X301		9965 000 13869	X'TAL 4.433619MHZ	1	1	1	1
X401		9965 000 05629	X'TAL 4.433619MHZ	1	1	1	1
JUNCTION A CBA							
CN603		9965 000 18089	CONNECTOR 13P TUC-P13X-B1	1	1	1	1
JUNCTION B CBA							
CN302		9965 000 13916	CONNECTOR, 8P TUC-P08X-B1	1	1	1	1
JUNCTION C CBA							
CN301		9965 000 05261	CONNECTOR 4P TUC-P04X-B1	1	1	1	1
SENSOR CBA							
Q201		9965 000 20922	PHOTO TRANSISTOR MID-32A22F	1	1	1	1
Q202		9965 000 20922	PHOTO TRANSISTOR MID-32A22F	1	1	1	1
POWER CBA							
Consists of the following							
			H.V./POWER SUPPLY CBA	1	1	1	1
			CRT CBA	1	1	1	1
			H.V./POWER SUPPLY CBA	1	1	1	1
COILS							
BC551		9965 000 13874	BEAD INDUCTORS FBA04HA600VB-00	1	1	1	1
BC602		9965 000 13875	BEAD INDUCTORS FBR07HA121TB-00	1	1	1	1
BC604		9965 000 13875	BEAD INDUCTORS FBR07HA121TB-00	1	1	1	1
BC605		9965 000 13875	BEAD INDUCTORS FBR07HA121TB-00	1	1	1	1
CAPACITORS							
C551			ELECTROLYTIC CAP. 1.5UF/50V M LL	1	1	1	1
C552			ELECTROLYTIC CAP. 1000UF/25V M	1	1	1	1
C553			CERAMIC CAP.(AX) B K 0.01UF/50V	1	1	1	1
C554			ELECTROLYTIC CAP. 470UF/35V M	1	1	1	1
C555			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C556			ELECTROLYTIC CAP. 2.2UF/50V M	1	1	1	1
C558			FILM CAP.(P) 0.047UF/50V J	1	1	1	1
C559	▲	9965 000 22651	CERAMIC CAP. R K 1500PF/2KV(HR)	1	1	1	1
C560	▲	9965 000 22648	P.P. CAP 0.0082UF/1.6K J	1	1	1	1
C561			FILM CAP.(P) 0.01UF/50V J	1	1	1	1
C562			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C565		9965 000 22655	ELECTROLYTIC CAP. 100UF/160V M	1	1	1	1
C566			PCB JUMPER D0.6-P10.0	1	1	1	1
C567	▲	9965 000 22654	ELECTROLYTIC CAP. 1UF/160V M	1	1	1	1
C569	▲	9965 000 22656	ELECTROLYTIC CAP. 4.7UF/250V M	1	1	1	1
C570	▲	9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C572	▲	9965 000 14852	ELECTROLYTIC CAP. 10UF/50V M	1	1	1	1
C575	▲	9965 000 22646	P.P. CAP 0.47UF/200V J	1	1	1	1
C577			ELECTROLYTIC CAP. 100UF/35V M	1	1	1	1
C578			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C602	▲	2020 554 90173	SAFETY CAP. 2200PF/250V KX	1	1	1	1
C604	▲	9965 000 14280	METALLIZED FILM CAP. 0.1UF/250V	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
C605	▲	9965 000 14280	METALLIZED FILM CAP. 0.1UF/250V	1	1	1	1
C607			CERAMIC CAP. 0.01UF/AC250V	1	1	1	1
C608			CERAMIC CAP. 0.01UF/AC250V	1	1	1	1
C609			CERAMIC CAP. 0.01UF/AC250V	1	1	1	1
C610			CERAMIC CAP. 0.01UF/AC250V	1	1	1	1
C611	▲	9965 000 22647	ELECTROLYTIC CAP. 150UF/400V(LQ TYPE)	1	1	1	1
C613			FILM CAP.(P) 0.039UF/50V J	1	1	1	1
C614			FILM CAP.(P) 0.001UF/50V J	1	1	1	1
C615	▲	9965 000 22658	FILM CAP.(P) 0.082UF/50V J	1	1	1	1
C616			CERAMIC CAP. R K 220PF/2KV(HR)	1	1	1	1
C618		9965 000 13908	ELECTROLYTIC CAP. 1UF/50V M	1	1	1	1
C619			ELECTROLYTIC CAP. 1000UF/16V M	1	1	1	1
C621			ELECTROLYTIC CAP. 470UF/16V M	1	1	1	1
C622			ELECTROLYTIC CAP. 1000UF/16V M	1	1	1	1
C624	▲	9965 000 13907	CERAMIC CAP.(AX) B K 220PF/50V	1	1	1	1
C625			ELECTROLYTIC CAP. 470UF/35V M	1	1	1	1
C626			CERAMIC CAP. R K 680PF/2KV(HR)	1	1	1	1
C627	▲	9965 000 22655	ELECTROLYTIC CAP. 100UF/160V M	1	1	1	1
C629			CERAMIC CAP.(AX) B K 0.01UF/50V	1	1	1	1
C630			ELECTROLYTIC CAP. 1000UF/6.3V M	1	1	1	1
C632			ELECTROLYTIC CAP. 100UF/16V M	1	1	1	1
C633			ELECTROLYTIC CAP. 47UF/25V M	1	1	1	1
C634			ELECTROLYTIC CAP. 4.7UF/50V M	1	1	1	1
C635			ELECTROLYTIC CAP. 22UF/50V M	1	1	1	1
C636			ELECTROLYTIC CAP. 100UF/10V M	1	1	1	1
CONNECTORS							
CN551		9965 000 13876	CONNECTOR BASE, 5P TV-50P-05-V3	1	1	1	1
CN552		9965 000 13842	CONNECTOR BASE, 8P TUC-P08P-B1	1	1	1	1
CN601		9965 000 13877	CONNECTOR BASE, 2P TV-50P-02-V3	1	1	1	1
CN602		9965 000 18117	CONNECTOR BASE 13P TUC-P13P-B1	1	1	1	1
DIODES							
D551		9965 000 13847	DIODE 1N5397-B	1	1	1	1
D553	▲	9965 000 13884	ZENER DIODE MTZJT-7720C	1	1	1	1
D554	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D556	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D557	▲	9965 000 13880	DIODE FR104-B	1	1	1	1
D558	▲	9965 000 13880	DIODE FR104-B	1	1	1	1
D560	▲	9965 000 13881	ZENER DIODE MTZJT-7736B	1	1	1	1
D561			PCB JUMPER D0.6-P5.0	1	1	1	1
D562	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D563		9965 000 12904	ZENER DIODE DZ-5.1BSBT265	1	1	1	1
D601	▲	9965 000 13883	DIODE 1N5399-B/P	1	1	1	1
D602	▲	9965 000 13883	DIODE 1N5399-B/P	1	1	1	1
D603	▲	9965 000 13883	DIODE 1N5399-B/P	1	1	1	1
D604	▲	9965 000 13883	DIODE 1N5399-B/P	1	1	1	1
D605		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D609		4822 130 33948	ZENER DIODE MTZJT-775.6B	1	1	1	1
D610	▲	9965 000 18164	ZENER DIODE MTZJT-7724C	1	1	1	1
D612	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D615	▲	9965 000 13880	DIODE FR104-B	1	1	1	1
D616		9965 000 13882	ZENER DIODE MTZJT-7718B	1	1	1	1
D617	▲	4822 130 83194	SCHOTTKY BARRIER DIODE 11EQS04	1	1	1	1
D618	▲	4822 130 83194	SCHOTTKY BARRIER DIODE 11EQS04	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
D619	▲	4822 130 80601	SCHOTTKY BARRIER DIODE ERB81-004	1	1	1	1
D620	▲	9965 000 13880	DIODE FR104-B	1	1	1	1
D621	▲	9965 000 13886	DIODE 1ZC33	1	1	1	1
D622	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D623	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D624	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D625	▲	9965 000 23556	ZENER DIODE MTZJT-776.8B	1	1	1	1
D626		9965 000 13885	FAST RECOVERY DIODE CA201-4	1	1	1	1
D627	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D629		4822 130 81729	ZENER DIODE MTZJT-7733C	1	1	1	1
D630		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D631		9965 000 13888	ZENER DIODE MTZJT-776.8A	1	1	1	1
D632	▲	9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
D633	▲	9965 000 13889	ZENER DIODE MTZJT-7724B	1	1	1	1
D634		9965 000 19520	CARBON RES. 1/4W J 100 OHM	1	1	1	1
D635		9965 000 11153	ZENER DIODE MTZJT-778.2B	1	1	1	1
D636	▲	4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D637		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D638		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D640		9965 000 23556	ZENER DIODE MTZJT-776.8B	1	1	1	1
D641		9965 000 18091	ZENER DIODE MTZJT-7715B	1	1	1	1
MISCELLANEOUS							
F601	▲	9965 000 13890	FUSE 4A/250V 215004	1	1	1	1
FH601		4822 256 10461	FUSE HOLDER MSF-015	1	1	1	1
FH602		4822 256 10461	FUSE HOLDER MSF-015	1	1	1	1
IC's							
IC551	▲	9965 000 18120	VERTICAL OUTPUT IC LA78040A	1	1	1	1
IC601	▲	9965 000 23546	PHOTOCOUPLER PS2561L1-1-VL	1	1	1	1
COILS							
L552		9965 000 18165	LINEALITY COIL ELH5J6137N	1	1	1	1
L553		9965 000 18121	CHOKE COIL 22UH-K	1	1	1	1
L554	▲	9965 000 05627	CHOKE COIL 47UH-K	1	1	1	1
L601	▲	9965 000 13894	LINE FILTER ELF15N007A	1	1	1	1
L602	▲	9965 000 13894	LINE FILTER ELF15N007A	1	1	1	1
L603		9965 000 05627	CHOKE COIL 47UH-K	1	1	1	1
PB1			POWER PCB HOLDER T6500RA	1	1	1	1
MISCELLANEOUS							
PB4		9965 000 18156	21V POW HEAT SINK PAL PHLT6500RA	1	1	1	1
PB5		9965 000 18123	13V P H/S PAL PHM ASSEMBLY T6400RA	1	1	1	1
PL1		9965 000 08646	SCREW, P-TIGHT 3X12 WASHER HEAD+	1	1	1	1
PL2		9965 000 12171	SCREW, B-TIGHT M3X8 BIND HEAD+	1	1	1	1
PS602	▲	9965 000 13896	THERMISTOR ZPB31BL9R0A	1	1	1	1
TRANSISTORS							
Q551	▲	9965 000 18167	TRANSISTOR TT2140LS-YB11	1	1	1	1
Q553		9965 000 13899	TRANSISTOR 2SC1627Y-TPE2	1	1	1	1
Q554	▲	9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q602	▲	9965 000 13901	MOS FET 2SK2647	1	1	1	1
Q603	▲	4822 130 42292	TRANSISTOR 2SC2120-Y(TPE2)	1	1	1	1
Q604	▲	9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
Q605	▲	4822 130 63665	TRANSISTOR 2SA950(O)	1	1	1	1
Q606	▲	4822 130 42292	TRANSISTOR 2SC2120-Y(TPE2)	1	1	1	1
Q607	▲	4822 130 42292	TRANSISTOR 2SC2120-Y(TPE2)	1	1	1	1
Q608		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
RESISTORS							
R551			CARBON RES. 1/4W J 18K OHM	1	1	1	1
R552		9965 000 22664	CARBON RES. 1/4W J 2.2K OHM	1	1	1	1
R553			CARBON RES. 1/4W J 39K OHM	1	1	1	1
R554	▲		PCB JUMPER D0.6-P5.0	1	1	1	1
R555			CARBON RES. 1/4W J 4.7 OHM	1	1	1	1
R556			CARBON RES. 1/4W J 4.7 OHM	1	1	1	1
R558	▲	9965 000 19604	CARBON RES. 1/4W J 5.6 OHM	1	1	1	1
R559	▲	9965 000 19516	CARBON RES. 1/4W J 1 OHM	1	1	1	1
R560	▲	9965 000 19516	CARBON RES. 1/4W J 1 OHM	1	1	1	1
R561		9965 000 19516	CARBON RES. 1/4W J 1 OHM	1	1	1	1
R564	▲	9965 000 22664	CARBON RES. 1/4W J 2.2K OHM	1	1	1	1
R565			PCB JUMPER D0.6-P5.0	1	1	1	1
R566		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R567		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R568			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R569			CARBON RES. 1/4W J 470 OHM	1	1	1	1
R570			PCB JUMPER D0.6-P5.0	1	1	1	1
R572			CARBON RES. 1/4W J 560 OHM	1	1	1	1
R573	▲	9965 000 22676	METAL OXIDE FILM RES. 2W J 56 OHM	1	1	1	1
R574		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R575			METAL OXIDE FILM RES. 1W J 1K OHM	1	1	1	1
R579	▲	9965 000 19602	CARBON RES. 1/4W J 100K OHM	1	1	1	1
R581			CARBON RES. 1/4W J 82K OHM	1	1	1	1
R583			PCB JUMPER D0.6-P5.0	1	1	1	1
R584	▲	9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R585	▲	9965 000 22661	CARBON RES. 1/4W J 150K OHM	1	1	1	1
R586	▲	9965 000 19600	CARBON RES. 1/4W J 68K OHM	1	1	1	1
R587	▲	9965 000 19513	CARBON RES. 1/4W J 47K OHM	1	1	1	1
R588	▲	9965 000 22684	CARBON RES. 1/4W J 22K OHM	1	1	1	1
R589	▲	9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R590	▲	9965 000 22677	METAL OXIDE FILM RES. 2W J 5.6 OHM	1	1	1	1
R591	▲	9965 000 22684	CARBON RES. 1/4W J 22K OHM	1	1	1	1
R592	▲	9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R593			CARBON RES. 1/4W J 8.2K OHM	1	1	1	1
R594		9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R595			CARBON RES. 1/4W J 2.7 OHM	1	1	1	1
R596			CARBON RES. 1/4W J 4.7 OHM	1	1	1	1
R601	▲	9965 000 22668	ANTI-SURGE RESISTOR 1/2W J 3.3M OHM	1	1	1	1
R602		9965 000 22668	ANTI-SURGE RESISTOR 1/2W J 3.3M OHM	1	1	1	1
R603		9965 000 22668	ANTI-SURGE RESISTOR 1/2W J 3.3M OHM	1	1	1	1
R604	▲	9965 000 14277	CEMENT RESISTOR 5W K 1.8 OHM	1	1	1	1
R605		9965 000 19520	CARBON RES. 1/4W J 100 OHM	1	1	1	1
R611		9965 000 22683	CARBON RES. 1/4W J 220 OHM	1	1	1	1
R612		9965 000 22682	CARBON RES. 1/4W J 180 OHM	1	1	1	1
R613			CARBON RES. 1/4W J 270K OHM	1	1	1	1
R615		9965 000 15270	CARBON RES. 1/4W J 1.2K OHM	1	1	1	1
R616	▲	9965 000 22663	CARBON RES. 1/4W J 22 OHM	1	1	1	1
R617	▲	9965 000 18168	CEMENT RES. 5W K 0.56 OHM	1	1	1	1
R618			PCB JUMPER D0.6-P5.0	1	1	1	1
R619		9965 000 15270	CARBON RES. 1/4W J 1.2K OHM	1	1	1	1
R620			CARBON RES. 1/4W J 820K OHM	1	1	1	1
R621			CARBON RES. 1/4W J 560K OHM	1	1	1	1

ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
R622			CARBON RES. 1/4W J 680K OHM	1	1	1	1
R624			CARBON RES. 1/4W J 680K OHM	1	1	1	1
R626	▲	9965 000 15270	CARBON RES. 1/4W J 1.2K OHM	1	1	1	1
R627			CARBON RES. 1/4W J 2.2 OHM	1	1	1	1
R628	▲	9965 000 19514	CARBON RES. 1/4W J 820 OHM	1	1	1	1
R629		9965 000 22659	CARBON RES. 1/2W J 1K OHM	1	1	1	1
R631	▲	9965 000 22687	CARBON RES. 1/4W J 33K OHM	1	1	1	1
R632	▲	9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R633	▲	9965 000 19518	CARBON RES. 1/4W J 15K OHM	1	1	1	1
R634	▲	9965 000 19518	CARBON RES. 1/4W J 15K OHM	1	1	1	1
R635	▲	9965 000 22682	CARBON RES. 1/4W J 180 OHM	1	1	1	1
R636	▲	9965 000 14870	CARBON RES. 1/4W G 1K OHM	1	1	1	1
R637	▲	9965 000 23547	CARBON RES. 1/4W G 5.6K OHM	1	1	1	1
R638	▲	9965 000 23548	CARBON RES. 1/4W G 47K OHM	1	1	1	1
R639	▲	9965 000 23549	CARBON RES. 1/4W G 39K OHM	1	1	1	1
R640	▲	9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R641	▲	9965 000 22659	CARBON RES. 1/2W J 1K OHM	1	1	1	1
R642	▲	9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R643	▲	9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R644	▲	9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R645	▲	9965 000 22667	CARBON RES. 1/4W J 56K OHM	1	1	1	1
R646	▲	9965 000 22660	CARBON RES. 1/4W J 15 OHM	1	1	1	1
R647	▲	9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R649	▲	9965 000 22688	CARBON RES. 1/4W J 390 OHM	1	1	1	1
R651		9965 000 19520	CARBON RES. 1/4W J 100 OHM	1	1	1	1
R652	▲	9965 000 22673	METAL OXIDE FILM RES. 2W J 22 OHM	1	1	1	1
R653	▲	9965 000 22681	CARBON RES. 1/4W J 150 OHM	1	1	1	1
R654	▲	9965 000 22664	CARBON RES. 1/4W J 2.2K OHM	1	1	1	1
R655			CARBON RES. 1/4W J 5.6K OHM	1	1	1	1
R656		9965 000 19513	CARBON RES. 1/4W J 47K OHM	1	1	1	1
R657	▲	9965 000 22683	CARBON RES. 1/4W J 220 OHM	1	1	1	1
R658	▲	9965 000 22678	METAL OXIDE FILM RES. 2W J 8.2K OHM	1	1	1	1
R659	▲	9965 000 22678	METAL OXIDE FILM RES. 2W J 8.2K OHM	1	1	1	1
R660			PCB JUMPER D0.6-P5.0	1	1	1	1
R661			CARBON RES. 1/4W J 1.8K OHM	1	1	1	1
R662			CARBON RES. 1/4W J 820K OHM	1	1	1	1
SA601	▲	9965 000 13898	SURGE ABSORBER PVR-07D471KB	1	1	1	1
SW602	▲	9965 000 13902	POWER SWITCH SDKVA30100	1	1	1	1
T551	▲	9965 000 18169	FLYBACK TRANS BSC23-2639S	1	1	1	1
T552		9965 000 18170	HORIZONTAL DRIVE TRANS LP2-004	1	1	1	1
T601	▲	9965 000 18171	SWITCHING TRANS 03702	1	1	1	1
TM601	▲	9965 000 22702	TAB 42018	1	1	1	1
TM602	▲	9965 000 22702	TAB 42018	1	1	1	1
VR601	▲	9965 000 23550	CARBON P.O.T. 20K OHM B	1	1	1	1
CRT CBA							
CAPACITORS							
C501		9965 000 13907	CERAMIC CAP.(AX) B K 220PF/50V	1	1	1	1
C502		9965 000 13907	CERAMIC CAP.(AX) B K 220PF/50V	1	1	1	1
C503		9965 000 13907	CERAMIC CAP.(AX) B K 220PF/50V	1	1	1	1
C504			CERAMIC CAP. B K 1000PF/2KV	1	1	1	1
C505			ELECTROLYTIC CAP. 1UF/50V M H7	1	1	1	1
CONNECTORS							
CL501A		9965 000 18172	LEAD WIRE 3P/260	1	1	1	1

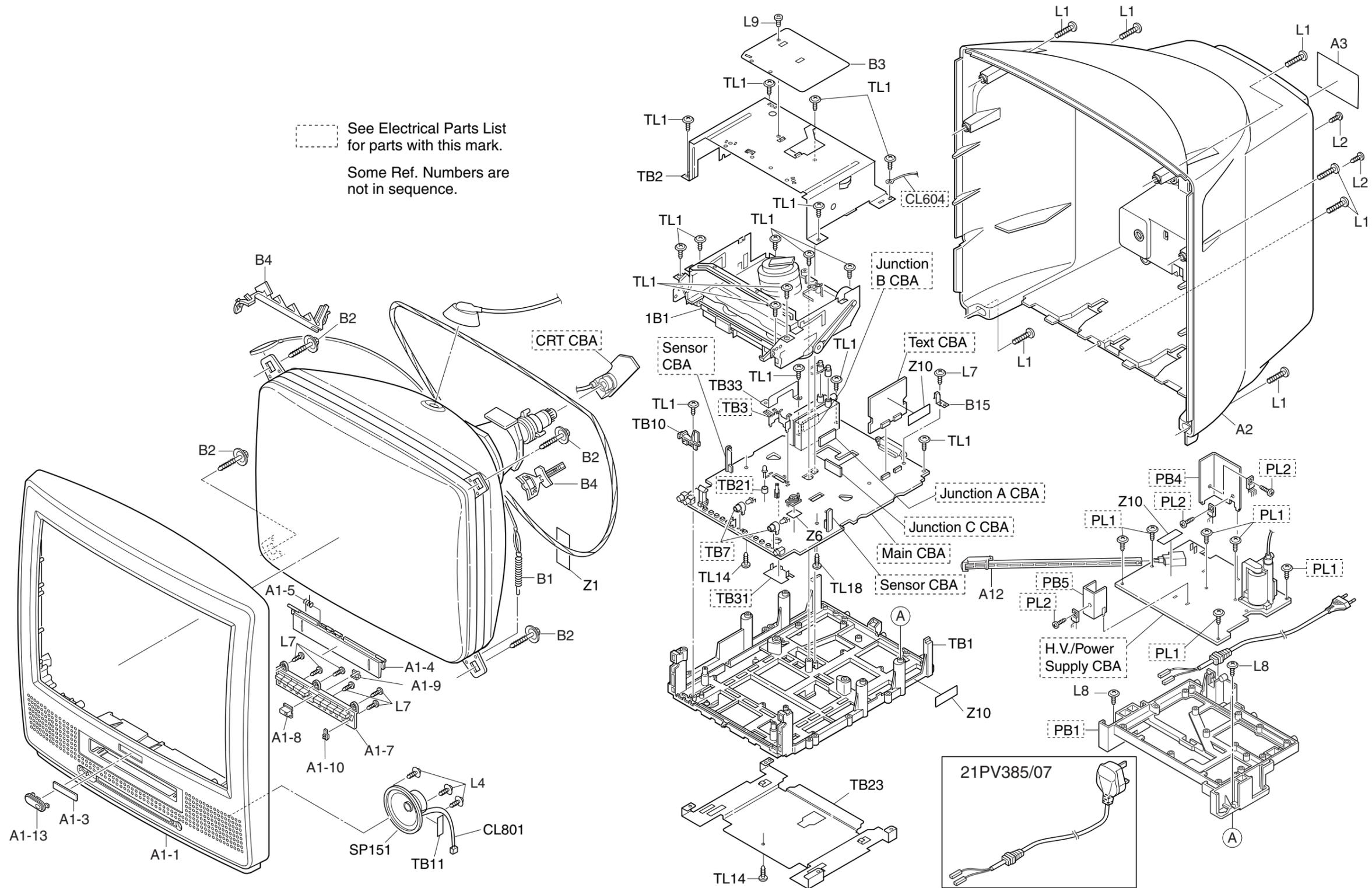
ELECTRICAL PARTS LIST				21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	▲	12 NC	Description				
CN501		9965 000 13911	PIN CONNECTOR 005P-5100	1	1	1	1
CN502		9965 000 05247	CONNECTOR BASE, 4P TUC-P04P-B1	1	1	1	1
JK501	▲	9965 000 18173	CRT SOCKET ISHS40S	1	1	1	1
COILS							
L501		9965 000 18174	INDUCTOR 150UH-J-5FT	1	1	1	1
TRANSISTORS							
Q501		9965 000 23551	TRANSISTOR KTC3503Y	1	1	1	1
Q502		9965 000 23551	TRANSISTOR KTC3503Y	1	1	1	1
Q503		9965 000 23551	TRANSISTOR KTC3503Y	1	1	1	1
RESISTORS							
R501	▲	4822 053 10183	METAL OXIDE FILM RES. 1W J 18K OHM	1	1	1	1
R502	▲	4822 053 10183	METAL OXIDE FILM RES. 1W J 18K OHM	1	1	1	1
R503	▲	4822 053 10183	METAL OXIDE FILM RES. 1W J 18K OHM	1	1	1	1
R504			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R506			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R508			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R509			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R510			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R511			PCB JUMPER D0.6-P5.0	1	1	1	1
R512			PCB JUMPER D0.6-P5.0	1	1	1	1
R513			PCB JUMPER D0.6-P5.0	1	1	1	1
R514			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R515			CARBON RES. 1/4W J 120K OHM	1	1	1	1
R516		9965 000 22660	CARBON RES. 1/4W J 15 OHM	1	1	1	1
R517			CARBON RES. 1/4W J 470 OHM	1	1	1	1
R518			CARBON RES. 1/4W J 120K OHM	1	1	1	1
R519		9965 000 22660	CARBON RES. 1/4W J 15 OHM	1	1	1	1
R520			CARBON RES. 1/4W J 470 OHM	1	1	1	1
R521			CARBON RES. 1/4W J 120K OHM	1	1	1	1
R522		9965 000 22660	CARBON RES. 1/4W J 15 OHM	1	1	1	1
R523			CARBON RES. 1/4W J 470 OHM	1	1	1	1
TP501			PCB JUMPER D0.6-P7.5	1	1	1	1
TP502			PCB JUMPER D0.6-P7.5	1	1	1	1
TP503			PCB JUMPER D0.6-P15.0	1	1	1	1
TP504			PCB JUMPER D0.6-P15.0	1	1	1	1
TEXT CBA							
CAPACITORS							
C901			ELECTROLYTIC CAP. 22UF/50V M	1	1	1	1
C902			CERAMIC CAP.(AX) B K 100PF/50V	1	1	1	1
C903			ELECTROLYTIC CAP. 0.1UF/50V M	1	1	1	1
C904			ELECTROLYTIC CAP. 0.1UF/50V M	1	1	1	1
C905			CERAMIC CAP.(AX) Y M 0.01UF/16V	1	1	1	1
C906			ELECTROLYTIC CAP. 100UF/10V M	1	1	1	1
C916			CERAMIC CAP.(AX) CH J 18PF/50V	1	1	1	1
C917			CERAMIC CAP.(AX) CH J 18PF/50V	1	1	1	1
C920			CERAMIC CAP.(AX) Y M 0.01UF/16V	1	1	1	1
C921			ELECTROLYTIC CAP. 100UF/10V M	1	1	1	1
C922			ELECTROLYTIC CAP. 100UF/10V M	1	1	1	1
C923			ELECTROLYTIC CAP. 100UF/10V M	1	1	1	1
C926			CERAMIC CAP.(AX) Y M 0.01UF/16V	1	1	1	1
CONNECTORS							
CN901		9965 000 13916	CONNECTOR, 8P TUC-P08X-B1	1	1	1	1
CN902		9965 000 13917	CONNECTOR, 6P TUC-P06X-B1	1	1	1	1

ELECTRICAL PARTS LIST			21PV385/01	21PV385/07	21PV385/39	21PV385/58	
Pos.	▲	12 NC	Description				
DIODES							
D901		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D902		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D903		9965 000 18140	ZENER DIODE MTZJT-773.6B	1	1	1	1
D904		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D905		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D906		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D907		4822 130 32778	SWITCHING DIODE 1SS133(T-77)	1	1	1	1
D908		9965 000 18119	ZENER DIODE DZ-3.3BSBT265	1	1	1	1
D909		9965 000 18119	ZENER DIODE DZ-3.3BSBT265	1	1	1	1
IC's							
IC901		9965 000 18141	IC:TEXT SAA5265	1	1	1	1
COILS							
L901		9965 000 18142	INDUCTOR 10UH-J-26T	1	1	1	1
L902		9965 000 18142	INDUCTOR 10UH-J-26T	1	1	1	1
TRANSISTORS							
Q901		9965 000 05643	TRANSISTOR 2SC2785(F)	1	1	1	1
RESISTORS							
R901		9965 000 15270	CARBON RES. 1/4W J 1.2K OHM	1	1	1	1
R902		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R903			CARBON RES. 1/4W J 24K OHM	1	1	1	1
R904		9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R905		9965 000 09896	CARBON RES. 1/4W J 10K OHM	1	1	1	1
R906			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R908			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R911			CARBON RES. 1/4W J 1.5K OHM	1	1	1	1
R912		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R913			PCB JUMPER D0.6-P5.0	1	1	1	1
R914			PCB JUMPER D0.6-P5.0	1	1	1	1
R915			PCB JUMPER D0.6-P5.0	1	1	1	1
R916		9965 000 22683	CARBON RES. 1/4W J 220 OHM	1	1	1	1
R918		9965 000 22676	METAL OXIDE FILM RES. 2W J 56 OHM	1	1	1	1
R919			PCB JUMPER D0.6-P5.0	1	1	1	1
R920			PCB JUMPER D0.6-P5.0	1	1	1	1
R921		9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R922		9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R923		9965 000 12891	CARBON RES. 1/4W J 3.3K OHM	1	1	1	1
R924		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
R925			CARBON RES. 1/4W J 10 OHM	1	1	1	1
R926			CARBON RES. 1/4W J 4.7K OHM	1	1	1	1
R927		9965 000 22680	CARBON RES. 1/4W J 1K OHM	1	1	1	1
X901		9965 000 12194	X'TAL 12.000MHZ	1	1	1	1

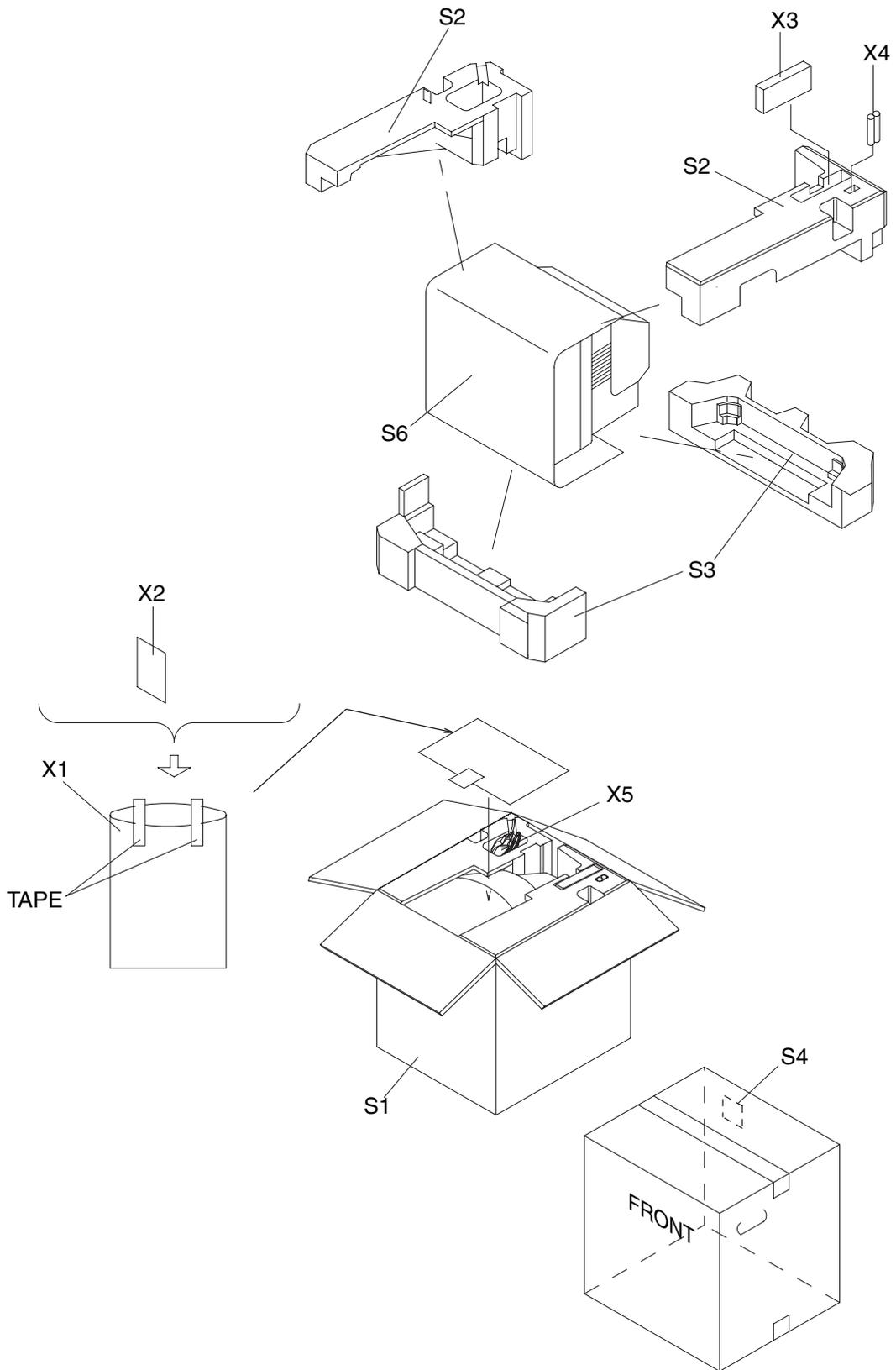
EXPLODED VIEWS

Cabinet

See Electrical Parts List for parts with this mark.
Some Ref. Numbers are not in sequence.



Packing



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 in this service manual.
 Don't degrade the safety of the product through improper servicing.

***)Note:**

Pos.1000 consists of

A1-1	A1-8
A1-3	A1-9
A1-4	A1-10
A1-5	L7
A1-7	

MECHANICAL PARTS LIST					21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	Pos. Expl. View	▲	12 NC	Description				
MECHANICAL PARTS								
*)	1000		3143 027 60521	FRONT ASSY 21PV385/01/07/58	1	1		1
*)	1000		3143 027 60531	FRONT ASSY 21PV385/39			1	
0001	A1-1			FRONT CABINET 21"	1	1	1	1
0011	A1-3			WORDMARK SILVER	1	1	1	1
0005	A1-4			CASSETTE DOOR 21"	1	1	1	1
0006	A1-5			LEG SPRING	1	1	1	1
0009	A1-7			FUNCTION KNOB 21"	1	1	1	1
0012	A1-8			SENSOR WINDOW 21"	1	1	1	1
0008	A1-9			LED LENS 21" (L)	1	1	1	1
0007	A1-10			LED LENS 21" (R)	1	1	1	1
0013	L4			PL PAN SCR 3X12 WITH WASH10	1	1	1	1
0059	L7		4822 502 14109	SCR PAN TORX TAP ST ZN BK 3X10	1	1	1	1
0002	B4		4822 402 10159	BRACKET ==>20/21"	1	1	1	1
0003	Z1			TAPE S-ADH CLOTH GY 30MM 50M	1	1	1	1
0004	B1		3143 021 20031	TENSION SPRING	1	1	1	1
0015			3143 027 50351	CABLE CLAMP	1	1	1	1
0030	B3		3143 021 20091	SHIELD PLATE 21"	1	1	1	1
0031	B15		3143 021 20021	TE HOLDER	1	1	1	1
0055	L1		4822 502 14062	SCREW	1	1	1	1
0056	L2			TORX HEAD TAPPING SCREW M4X12	1	1	1	1
0057	L8			FLAT HEAD SCREW 4X18	1	1	1	1
0058	L9			SHIELD PLATE SCREW M3X4	1	1	1	1
0070	A2		3143 027 50321	REAR CABINET 21"	1	1	1	1
0071	A12		3143 027 50311	POWER BUTTON 21"	1	1	1	1
0072	A13		3143 027 50331	JACK COVER	1	1	1	1
1010	SP151		9965 000 18286	SPEAKER ASSY 21"	1	1	1	1
1100				CRT A51EAL135X09 (LGPD) B	1	1	1	1
0054	B2			CRT FIXING SCREW (EJOT K70X25)	1	1	1	1
0010			4822 502 14109	SCR PAN TORX TAP ST ZN BK 3X10	1	1	1	1
TB2	TB2			TOP COVER T6300RA	1	1	1	1
TB10	TB10		9965 000 18157	RCA HOLDER(B) T6500RA	1	1	1	1
TB11	TB11			CLOTH(10X30XT:0.3) T5300UA	1	1	1	1

MECHANICAL PARTS LIST					21PV385/01	21PV385/07	21PV385/39	21PV385/58
Pos.	Pos. Expl. View	▲	12 NC	Description				
TB23	TB23			BOTTOM PLATE T6300RA	1	1	1	1
TB33	TB33			EARTH HOLDER(TU) T6310EZ	1	1	1	1
TL1	TL1		9965 000 08646	SCREW, P-TIGHT 3X12 WASHER HEAD+	1	1	1	1
TL14	TL14		9965 000 12171	SCREW, B-TIGHT M3X8 BIND HEAD+	1	1	1	1
TL18	TL18		9965 000 13027	SCREW, P-TIGHT M3X8 BIND HEAD+	1	1	1	1
PACKING								
0150	X3		3143 028 50091	RC RT351/111	1	1	1	1
0450	S1			BOX FOLDED 21PV385	1	1	1	1
0453	S2			STYROFOAM TOP 21"	1	1	1	1
0454	S2			STYROFOAM BOTTOM 21"	1	1	1	1
0455	X1			BAG (==>MAINS CORD)	1	1	1	1
0469	S6			TOPFOIL	1	1	1	1
			3143 023 20011	TEST TAPE FL6K(S)	1	1	1	1
			3143 023 20051	TEST TAPE E-120 HS	1	1	1	1
			3143 023 20041	TEST TAPE FL6M	1	1	1	1
			3143 023 20021	TEST TAPE FL6NS8	1	1	1	1

DECK MECHANISM SECTION

TV-VCR COMBINATION

- | |
|---|
| <p>Sec. 2: Deck Mechanism Section</p> <ul style="list-style-type: none">● Standard Maintenance● Mechanism Alignment Procedures● Disassembly / Assembly of Mechanism● Deck Exploded Views● Deck Parts List |
|---|

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STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ○: Check ●: Change

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

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE 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.

Cleaning

Cleaning of Video Head

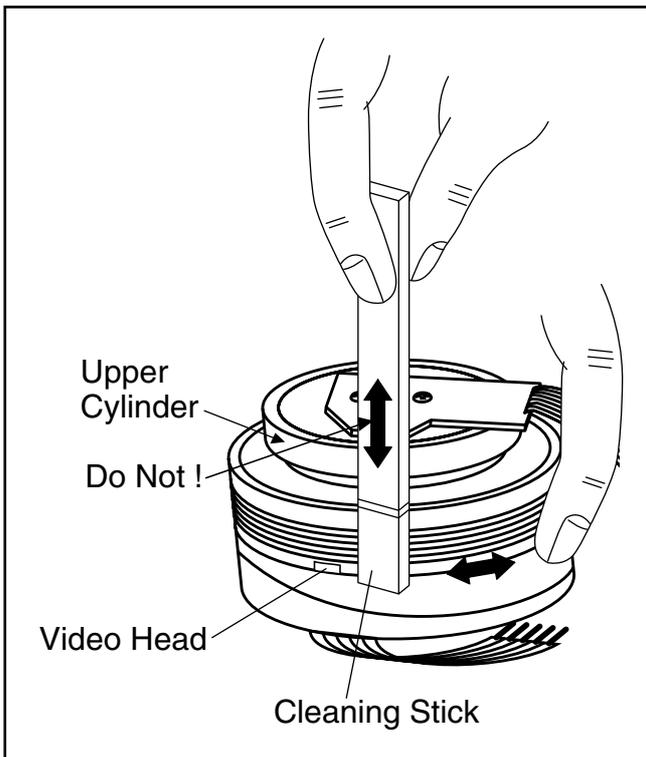
Clean the head with a head cleaning stick or chamois cloth.

Procedure

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

Notes:

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



Cleaning of ACE Head

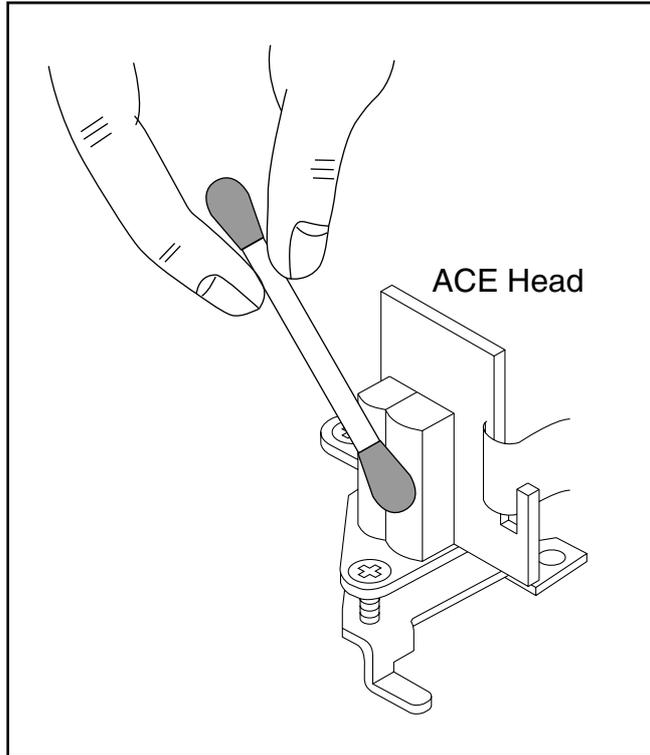
Clean the head with a cotton swab.

Procedure

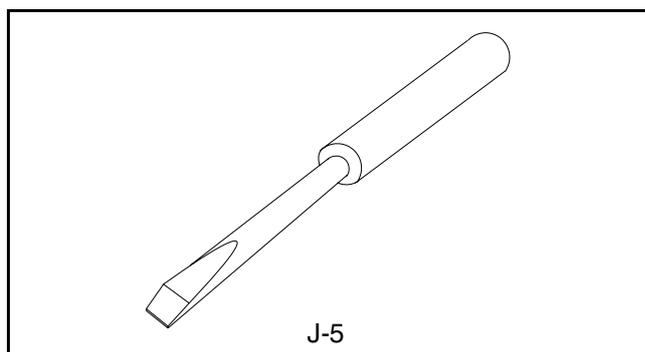
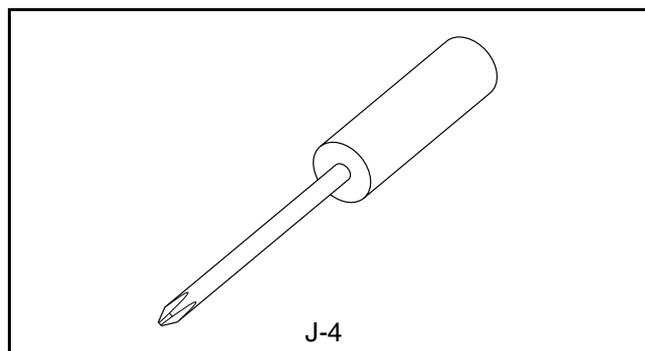
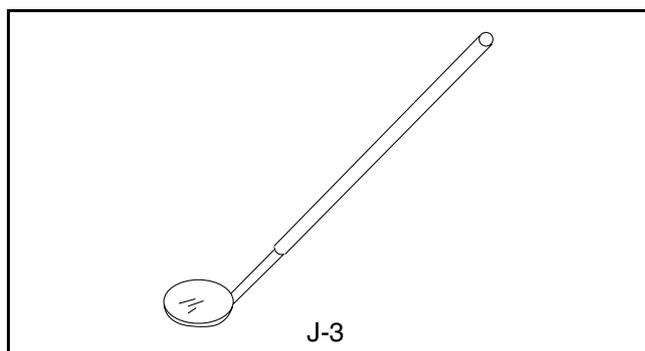
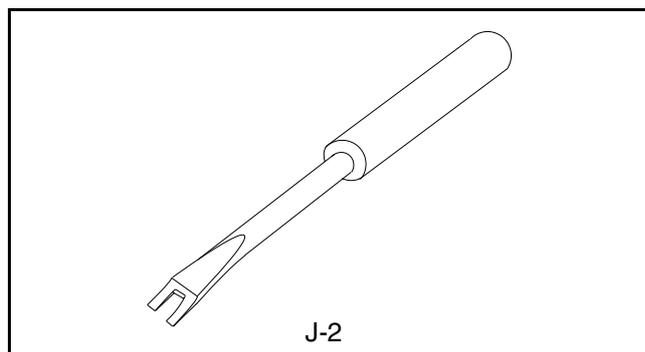
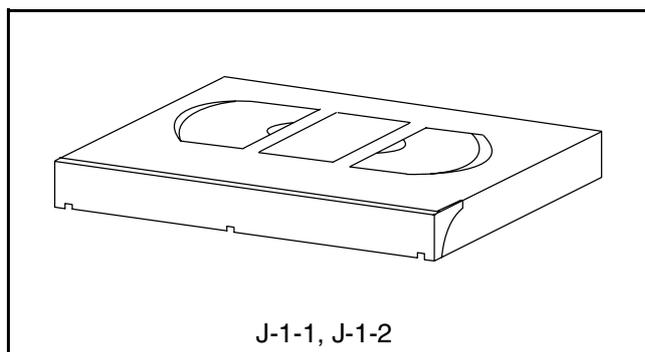
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

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



SERVICE FIXTURE AND TOOLS



Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	9965 000 14514	Head Adjustment of ACE Head
J-1-2	Alignment Tape	9965 000 14516 (2 Head model) 9965 000 14515 (4 Head model)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

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

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

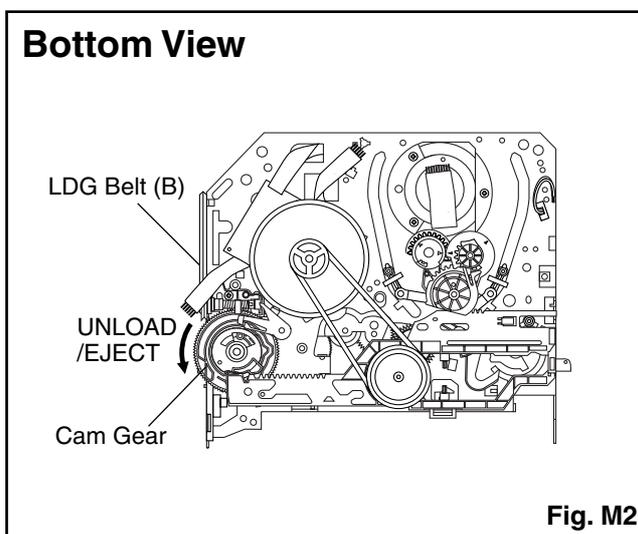
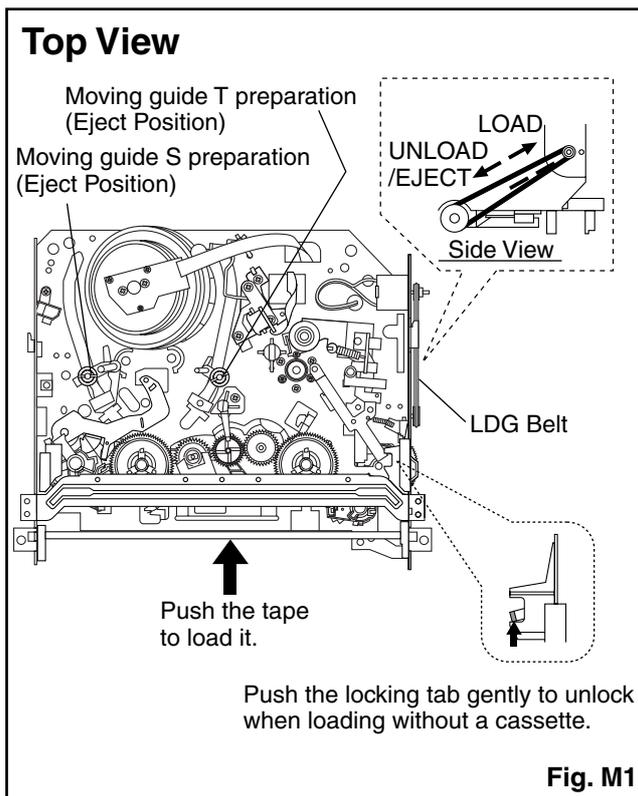
1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see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

To unload a cassette tape manually:

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

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

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



1. Tape Interchangeability Alignment

Note:

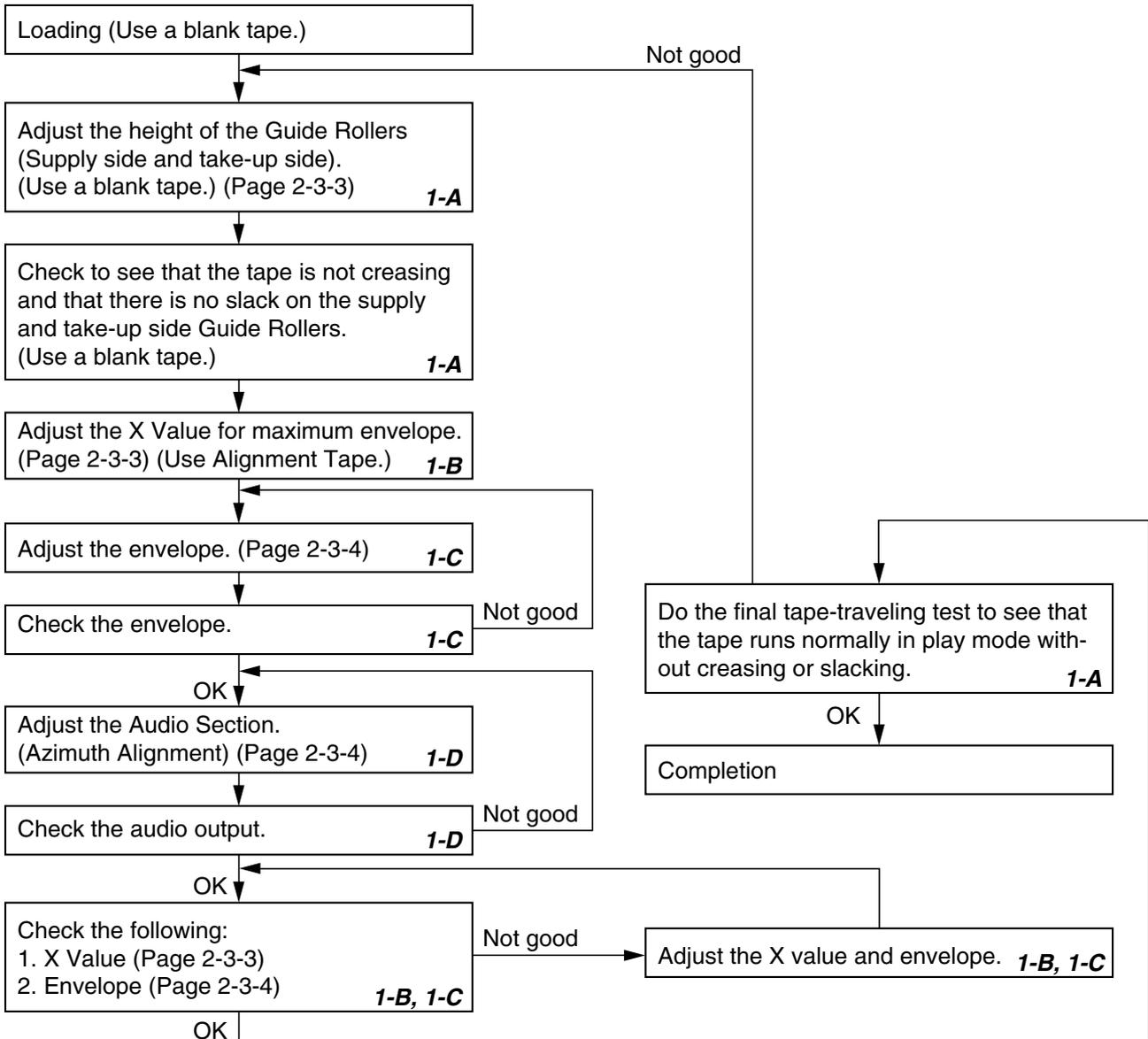
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

- Dual Trace Oscilloscope
- VHS Alignment Tape (9965 000 14516)
- Guide Roller Adj. Screwdriver
- Flat Screwdriver (Purchase Locally)

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

Flowchart of Alignment for tape traveling



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

Purpose:

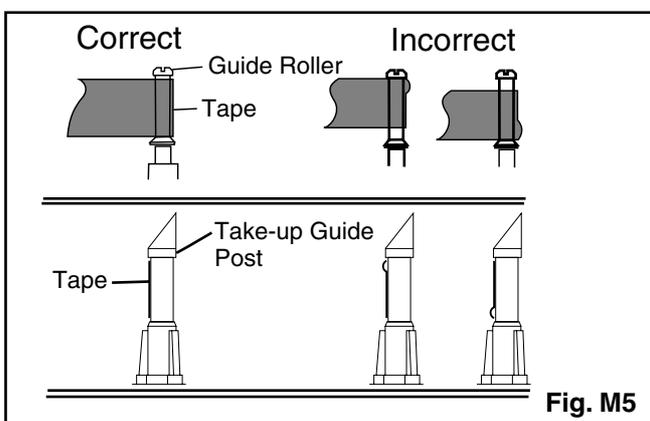
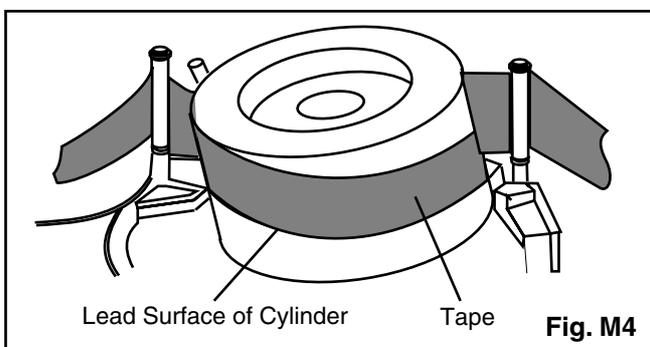
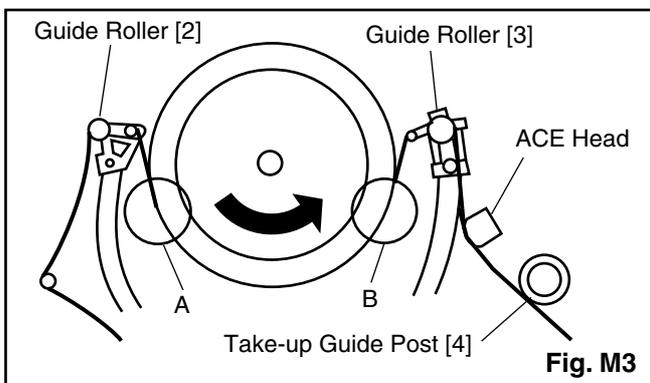
To make sure that the tape path is well stabilized.

Symptom of Misalignment:

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

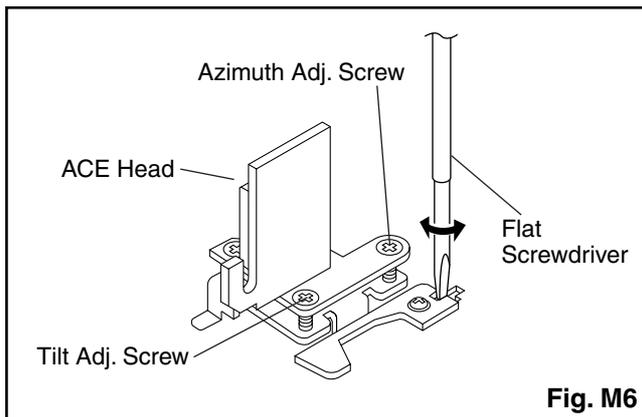
Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

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



3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)

4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)



1-B. X Value Alignment

Purpose:

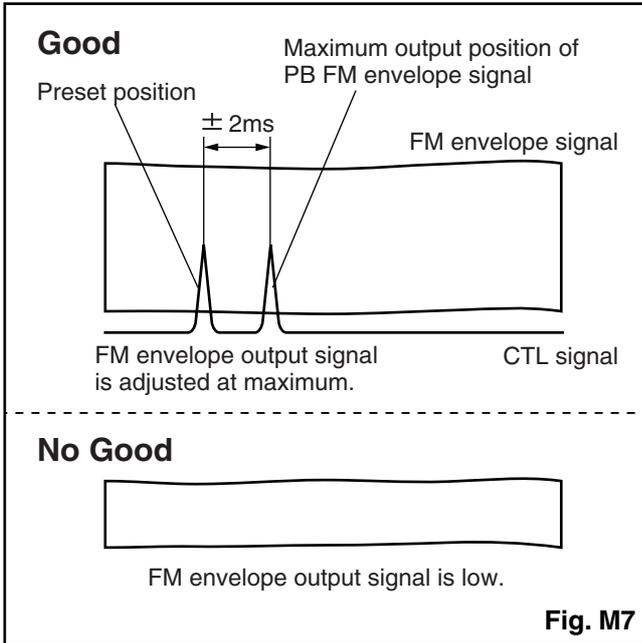
To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP008 (C-PB) and TP001 (CTL) on the Main CBA. Use TP002 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (9965 000 14516) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit then "PLAY" button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP008 (C-PB) is maximum. (Fig. M6)

- To shift the CTL waveform, press CH UP or CH DOWN button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal become within $\pm 2\text{ms}$ from preset position.



- Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit. and then "PLAY" button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

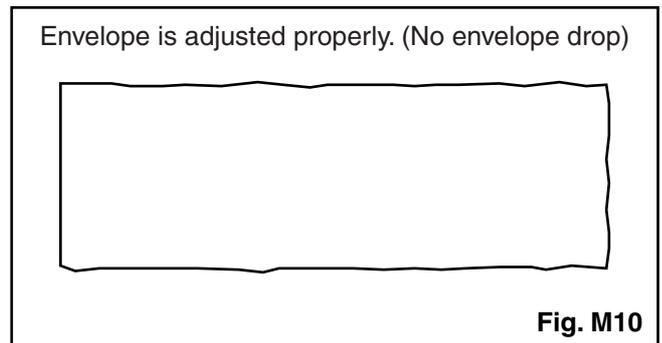
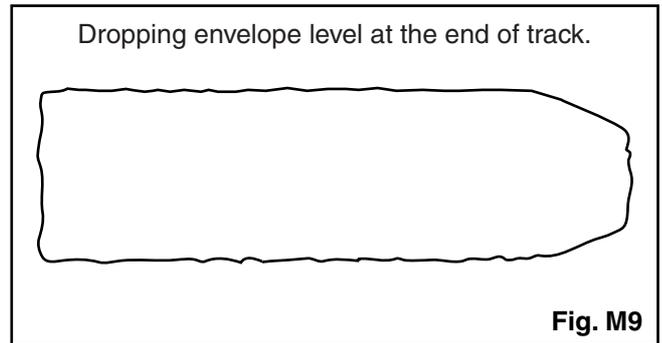
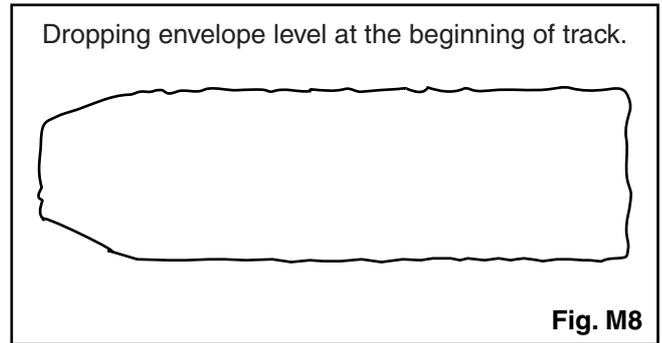
To achieve a satisfactory picture, adjust the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

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

- Connect the oscilloscope to TP008 (C-PB) on the Main CBA. Use TP002 (RF-SW) as a trigger.
- Playback the Gray Scale on the Alignment Tape (9965 000 14516). Set the Tracking Control Circuit to the preset position by pressing CH UP button and then "PLAY" button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
- If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
- If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.

- When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.



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

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

Purpose:

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

Symptom of Misalignment:

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

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (9965 000 14516) and confirm that the audio signal output level is 6kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-5-1 of Main Section.)

All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig. DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

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

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

↓ ↓ ↓ ↓ ↓ ↓ ↓
 (1) (2) (3) (4) (5) (6) (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.

These numbers are also used as identification (location) No. of parts in the figures.

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

(3): Name of the part

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

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.

P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder

e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation

(+):Refer to Deck Exploded Views for lubrication.

Top View

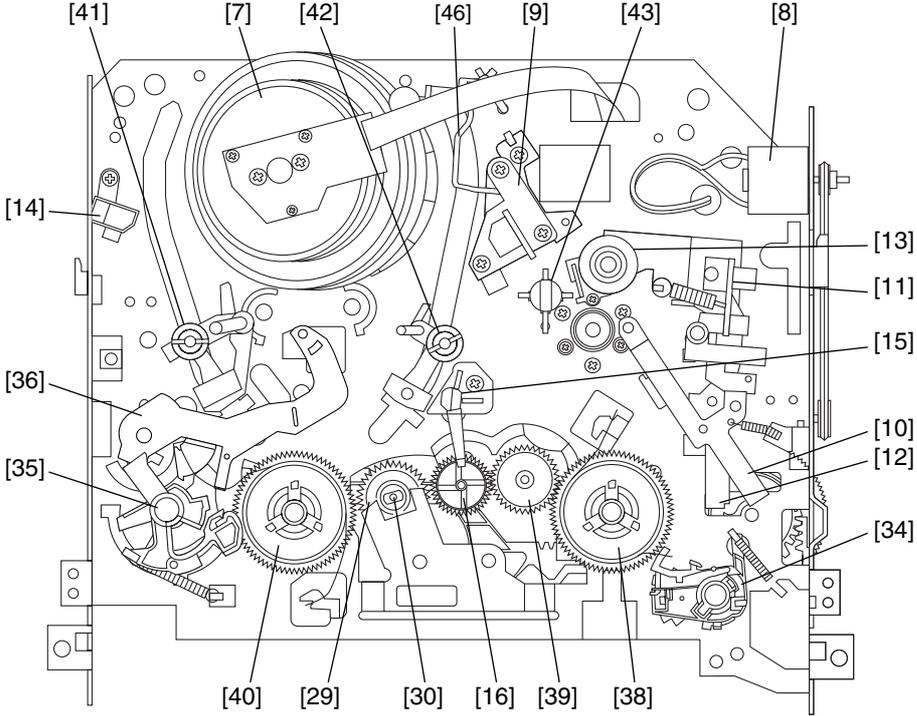


Fig. DM1

Bottom View

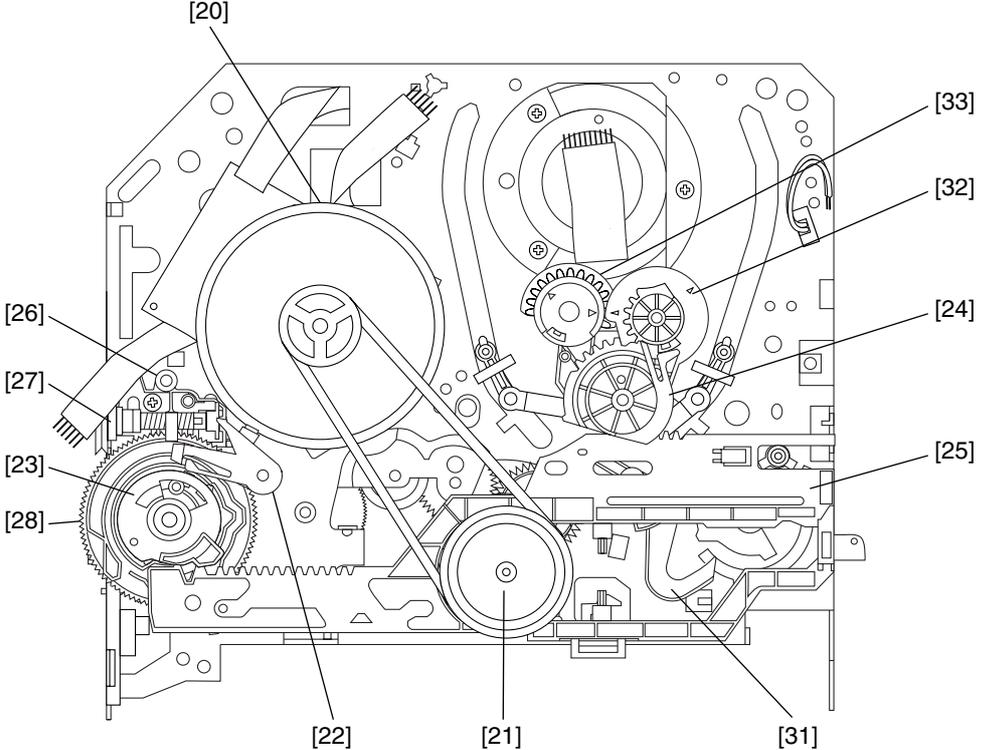
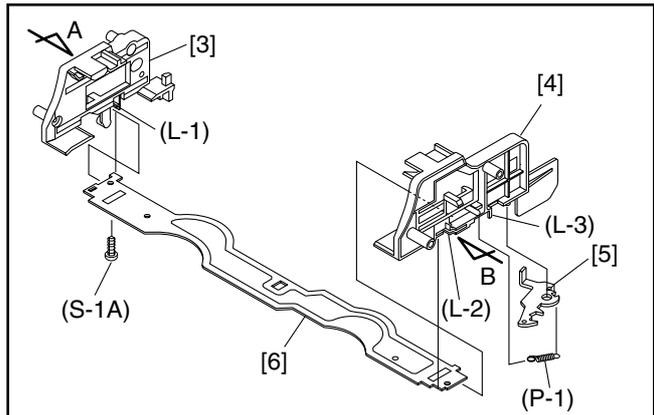
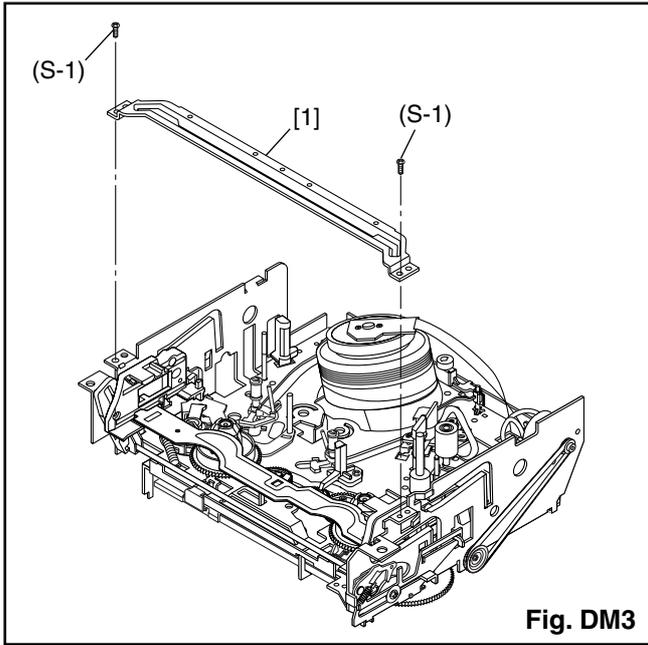
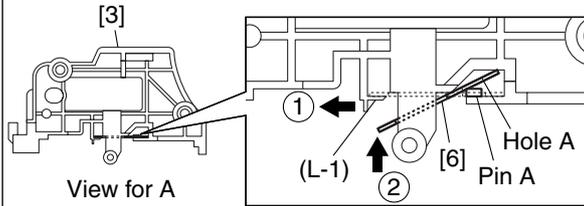


Fig. DM2



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in a direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in a direction of arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

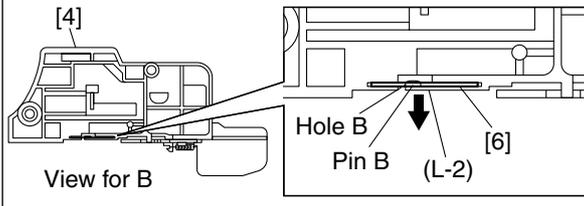
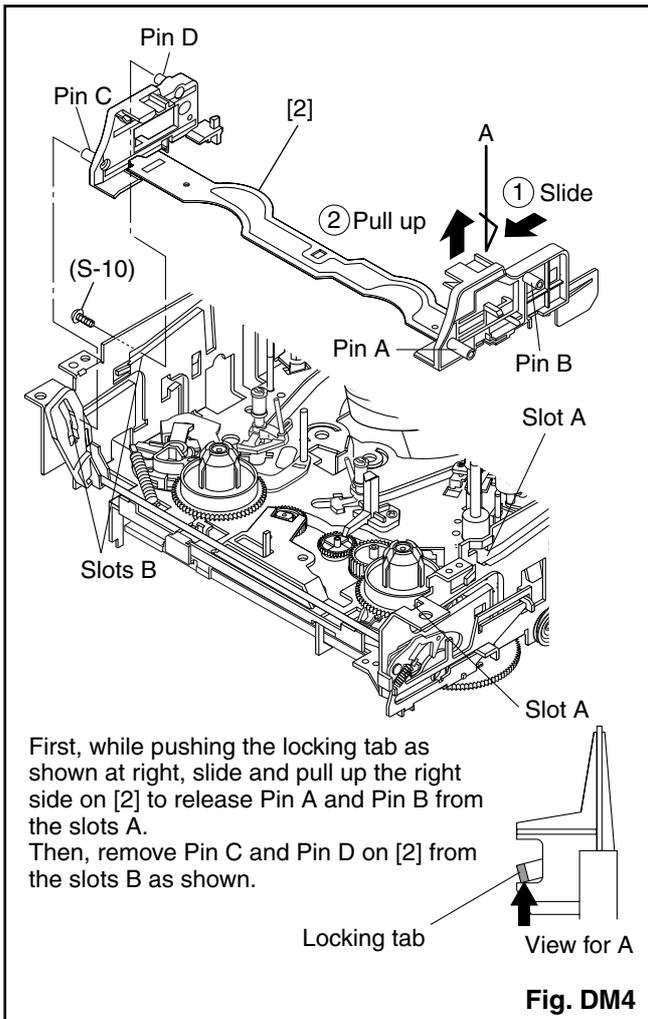
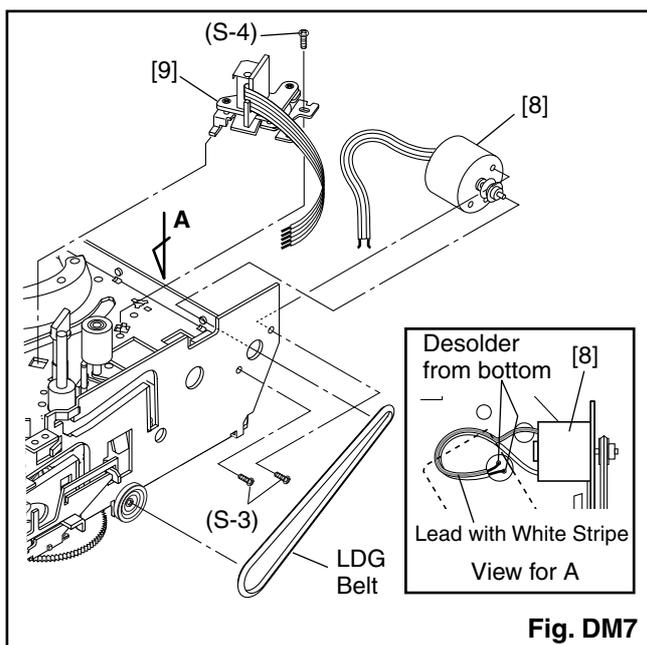
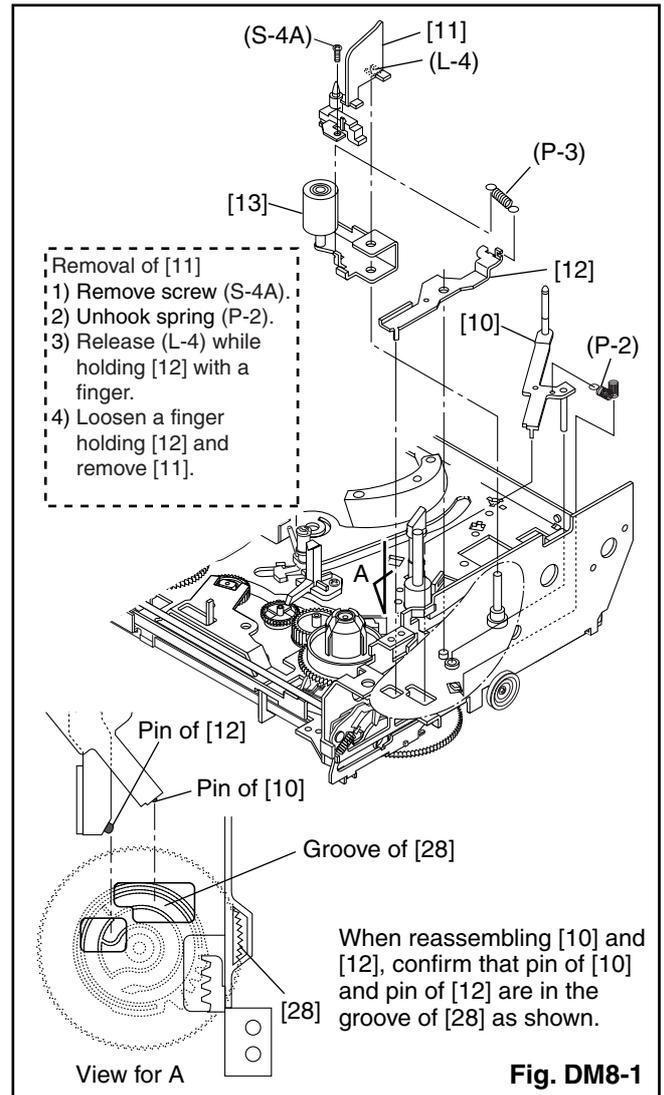
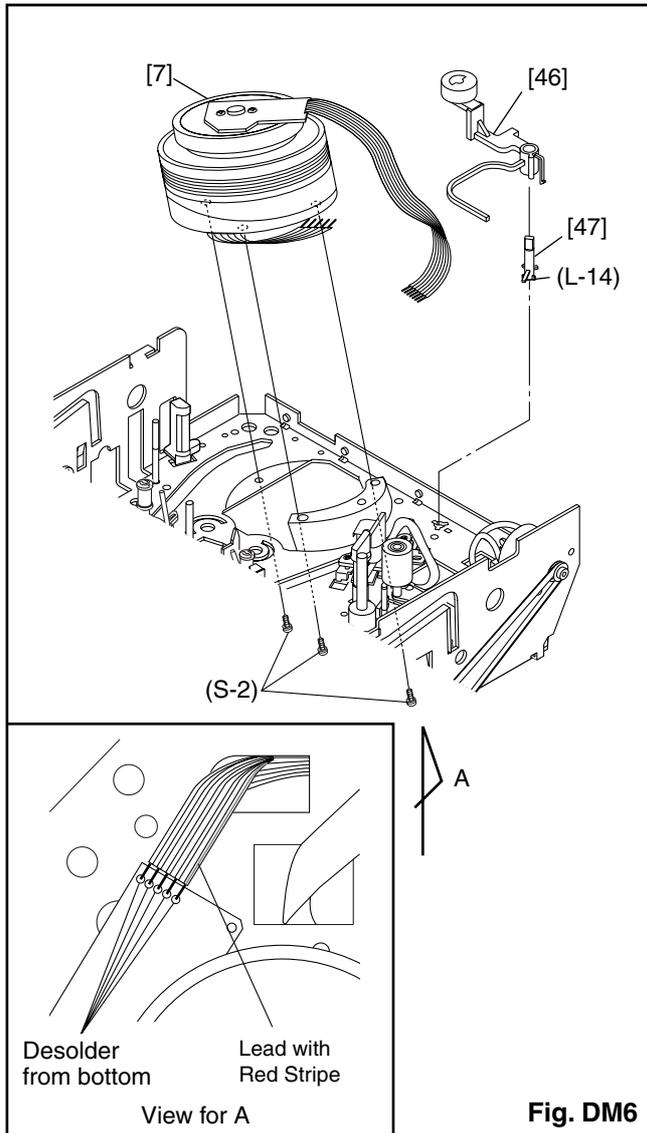


Fig. DM5



First, while pushing the locking tab as shown at right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A. Then, remove Pin C and Pin D on [2] from the slots B as shown.



Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install them to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

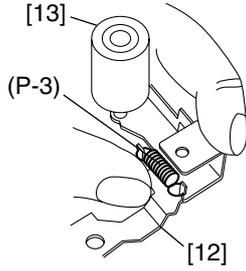


Fig. A

Install pin of [12] in groove of [28]. (Refer to Fig. B.)

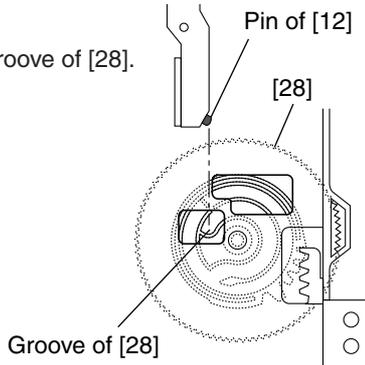


Fig. B (Top view)

Hold [12] and [13] till groove of pin of chassis looks and fit [13] in notch of chassis. Then, turn a few [13] while holding [12]. (Refer to Fig. C.)

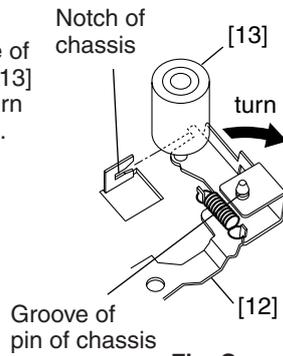


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8-1.)

Fig. DM8-2

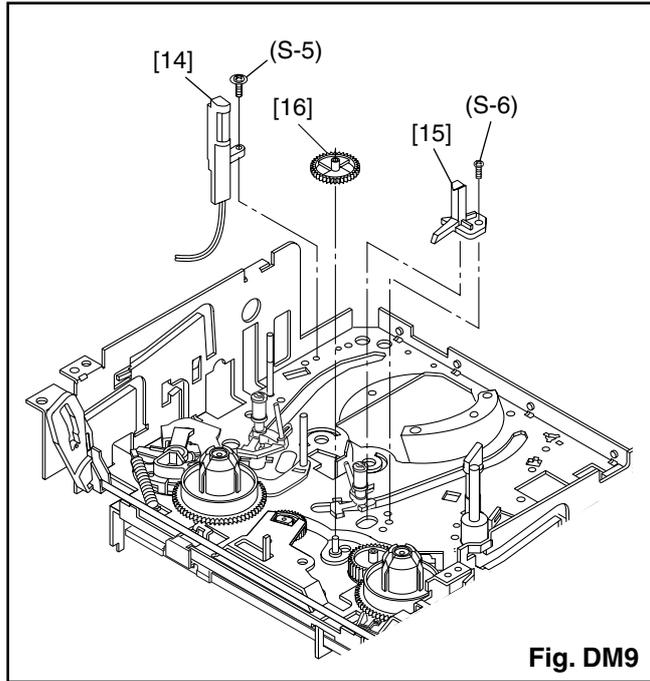


Fig. DM9

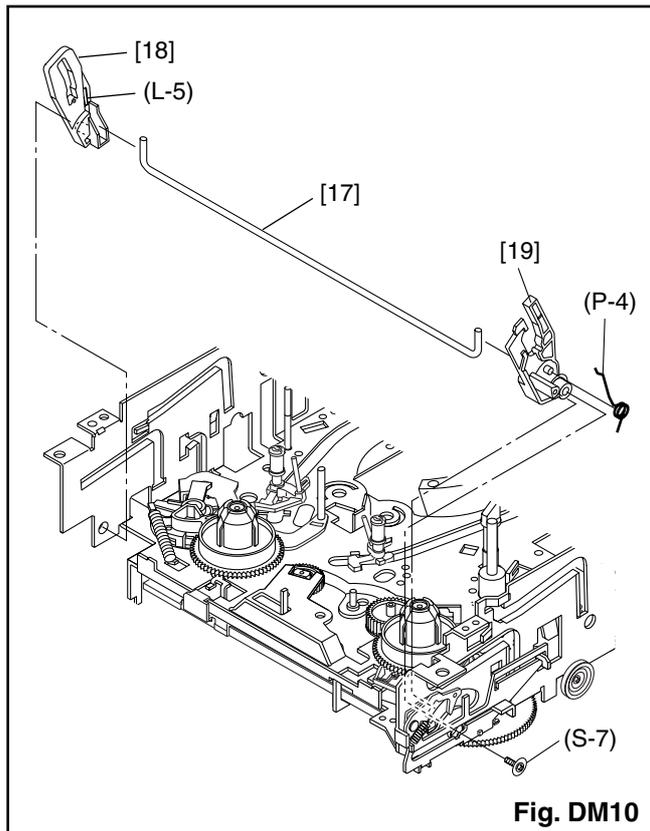


Fig. DM10

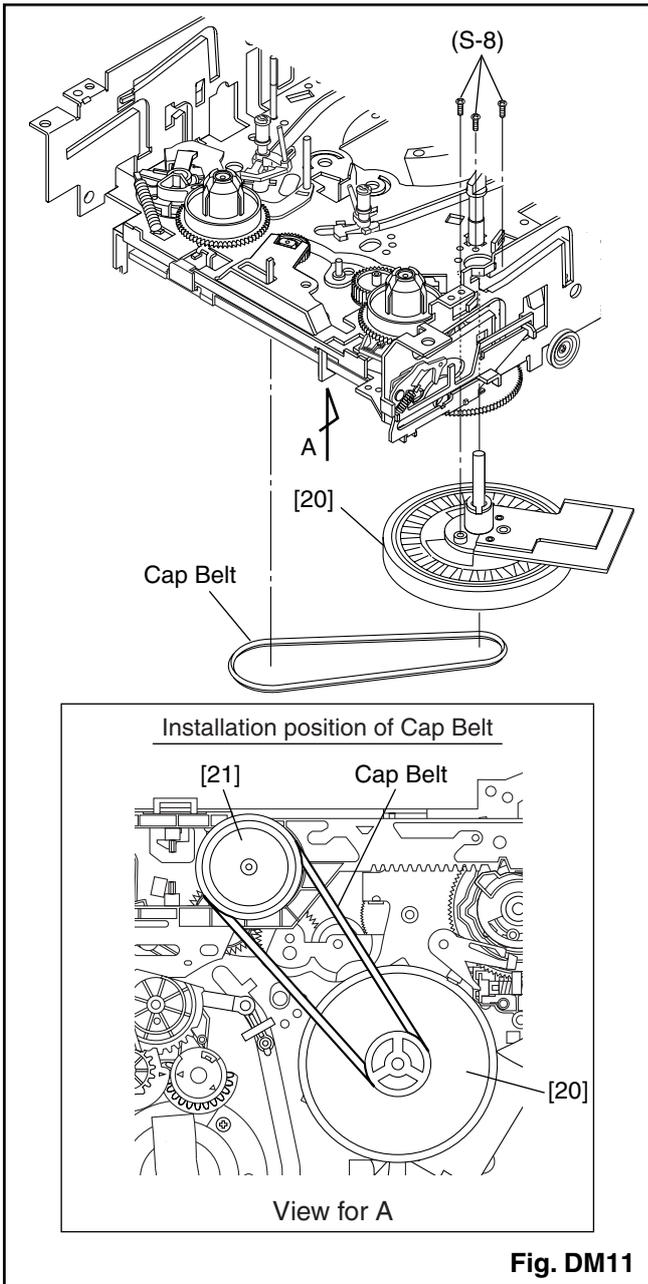


Fig. DM11

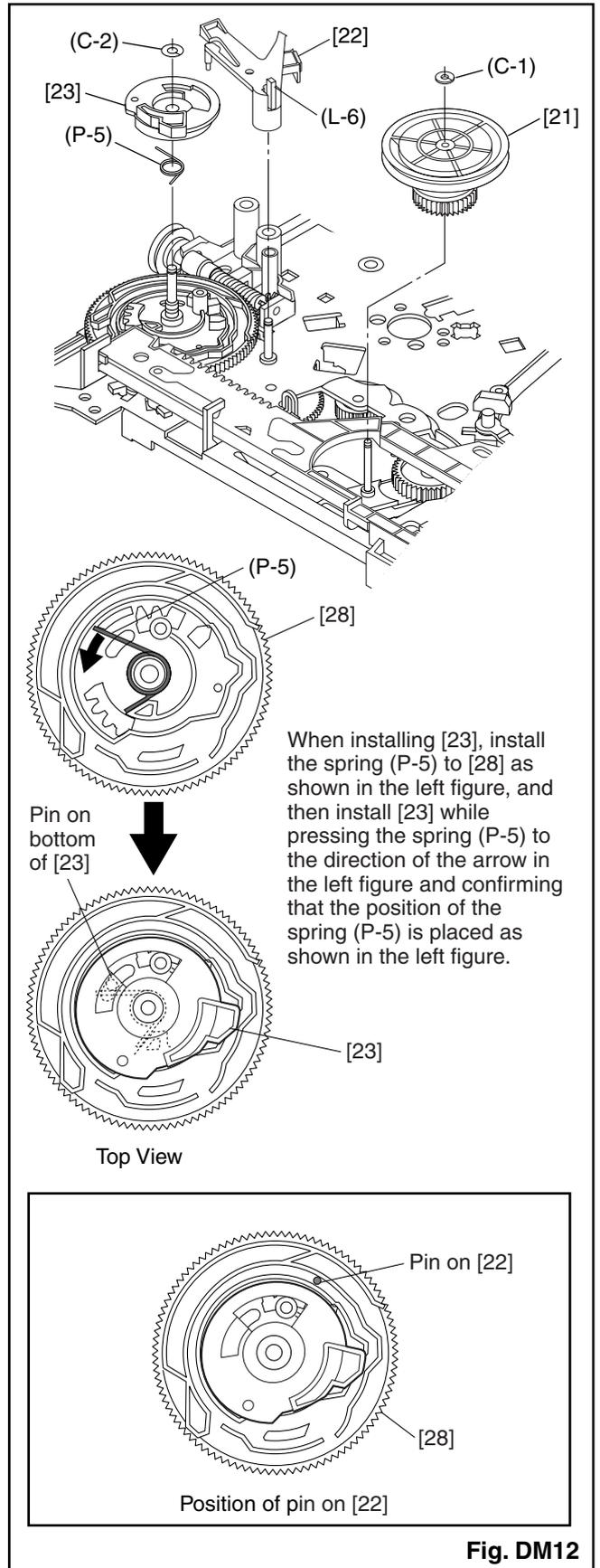


Fig. DM12

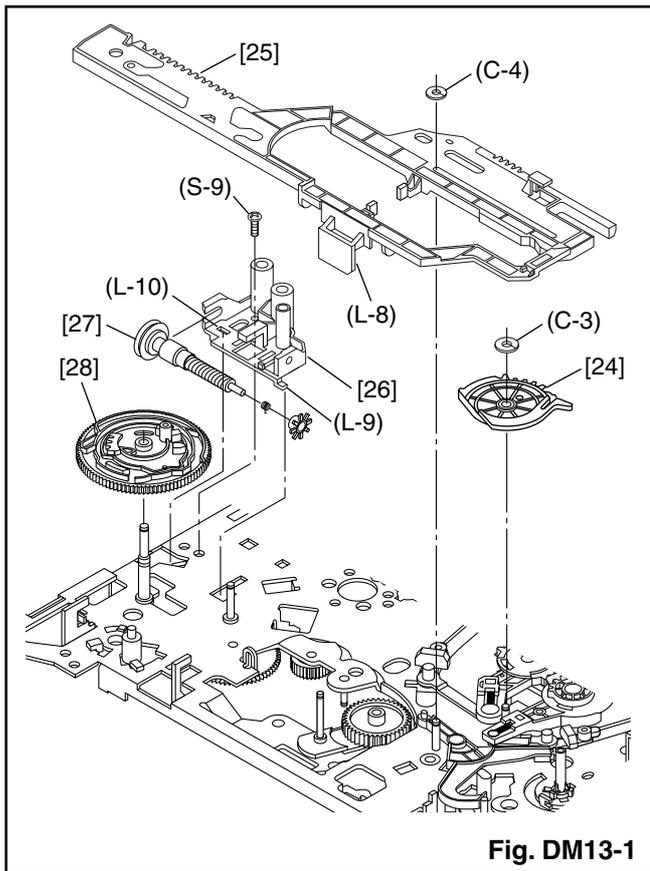


Fig. DM13-1

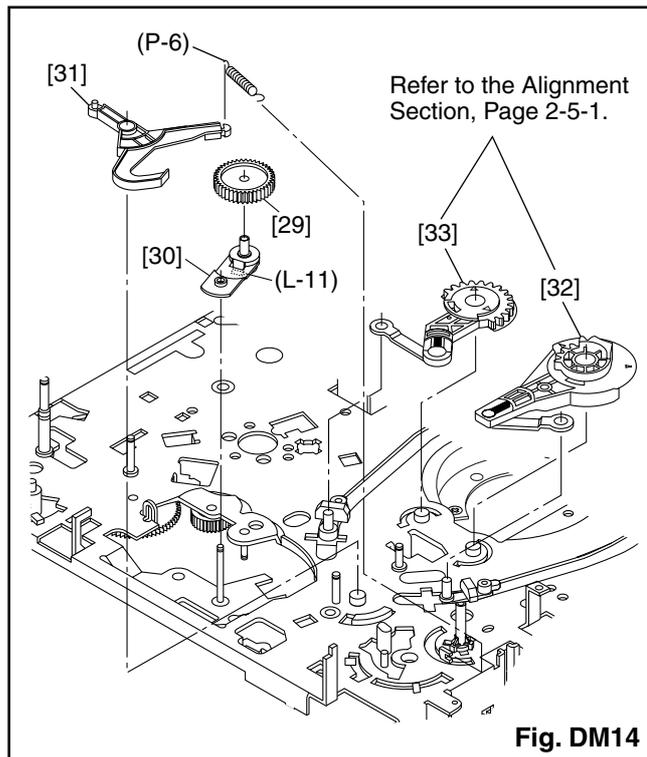


Fig. DM14

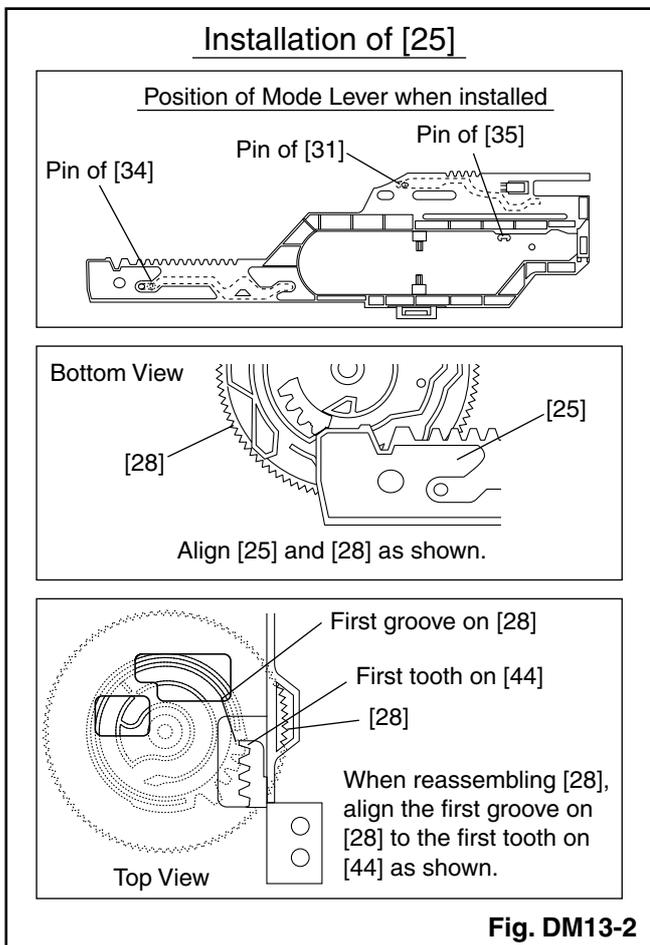


Fig. DM13-2

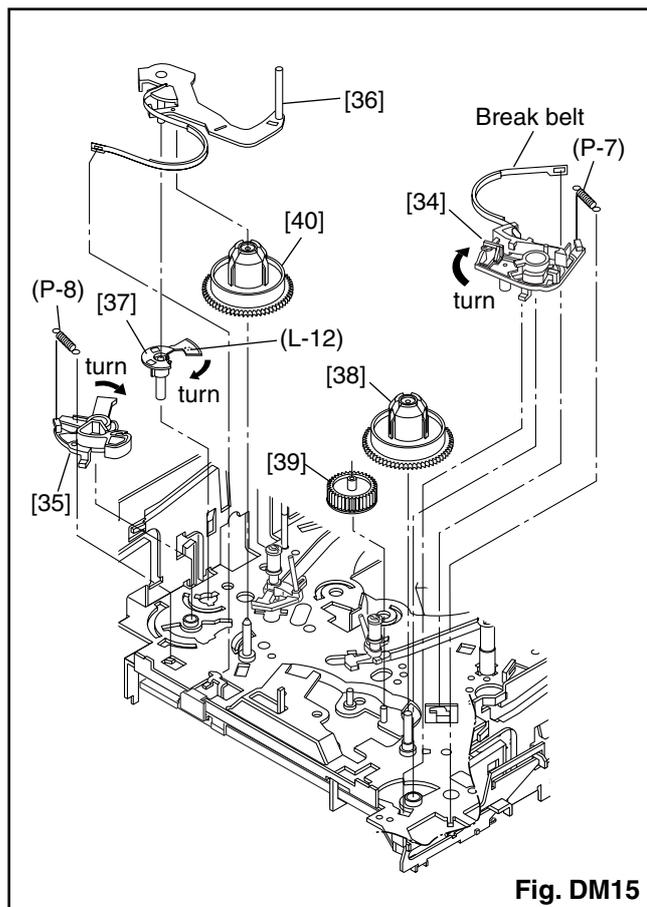


Fig. DM15

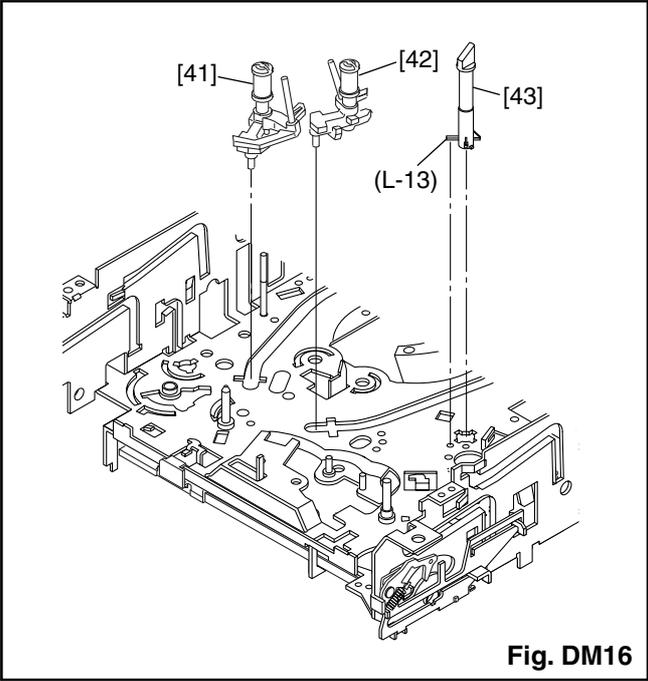


Fig. DM16

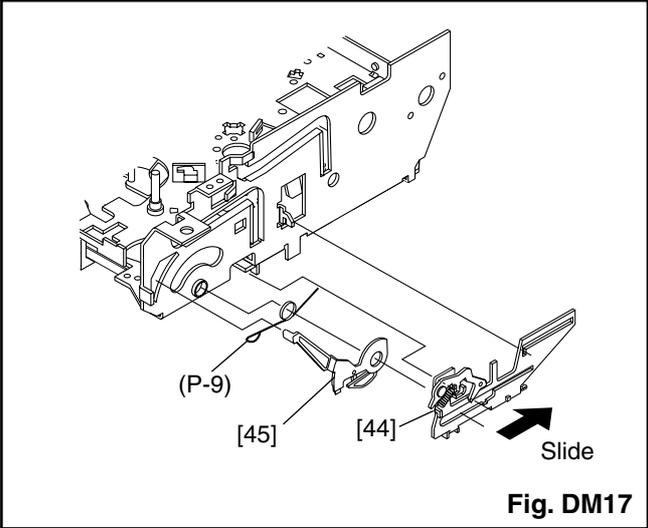


Fig. DM17

ALIGNMENT PROCEDURES OF MECHANISM

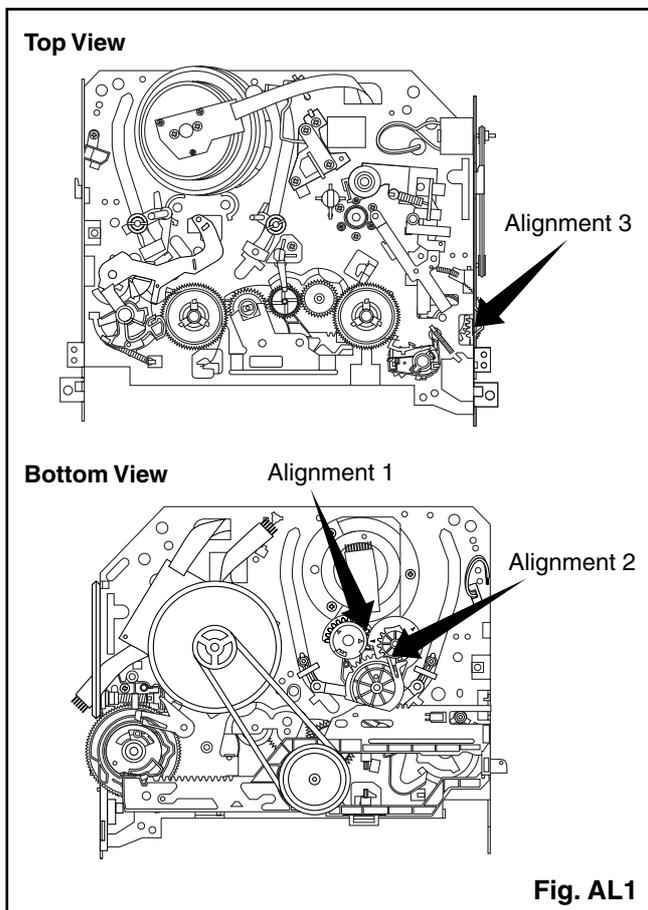
The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between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

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

IMPORTANT:

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

Alignment points in Eject Position



Alignment 1

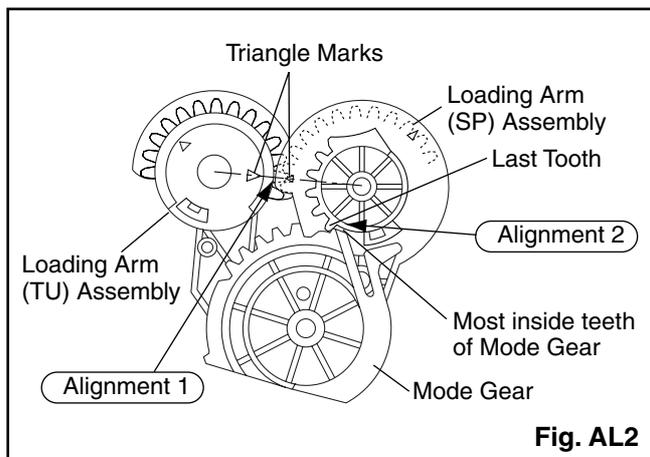
Loading Arm (SP) and (TU) Assembly

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

Alignment 2

Mode Gear

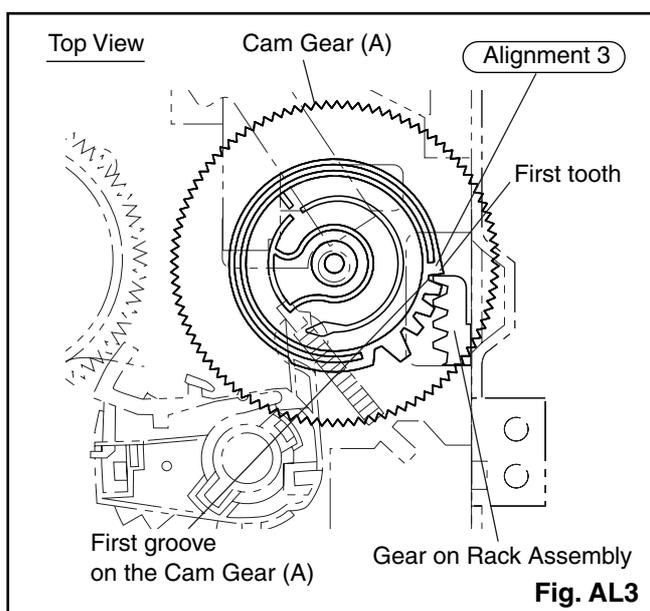
Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.



Alignment 3

Cam Gear (A), Rack Assembly

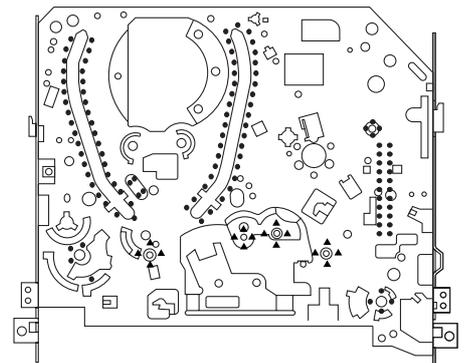
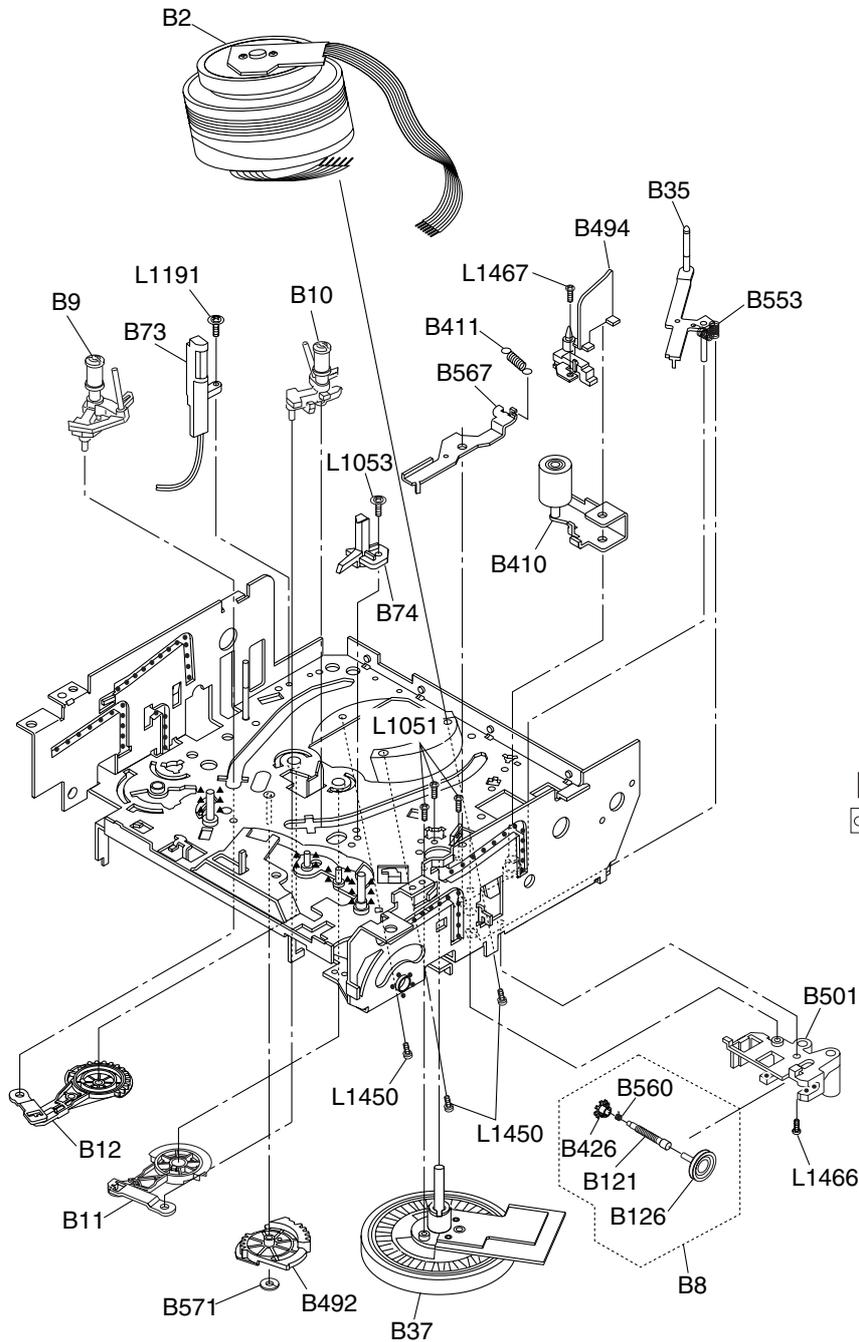
Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.



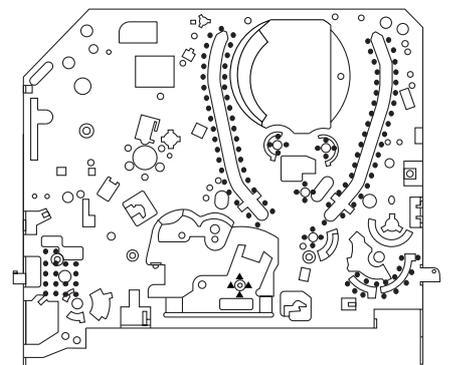
DECK EXPLODED VIEWS

Deck Mechanism View 1

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



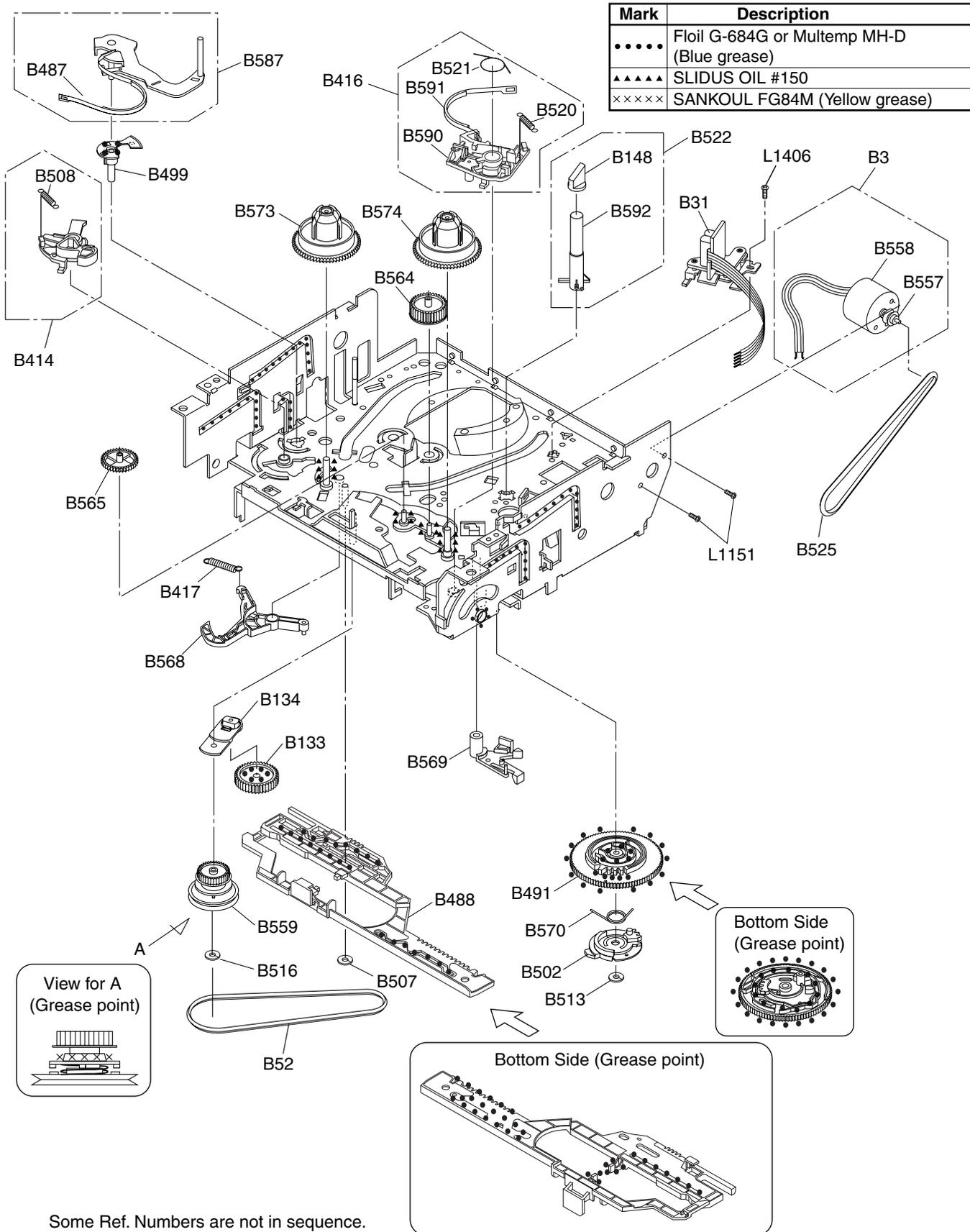
Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

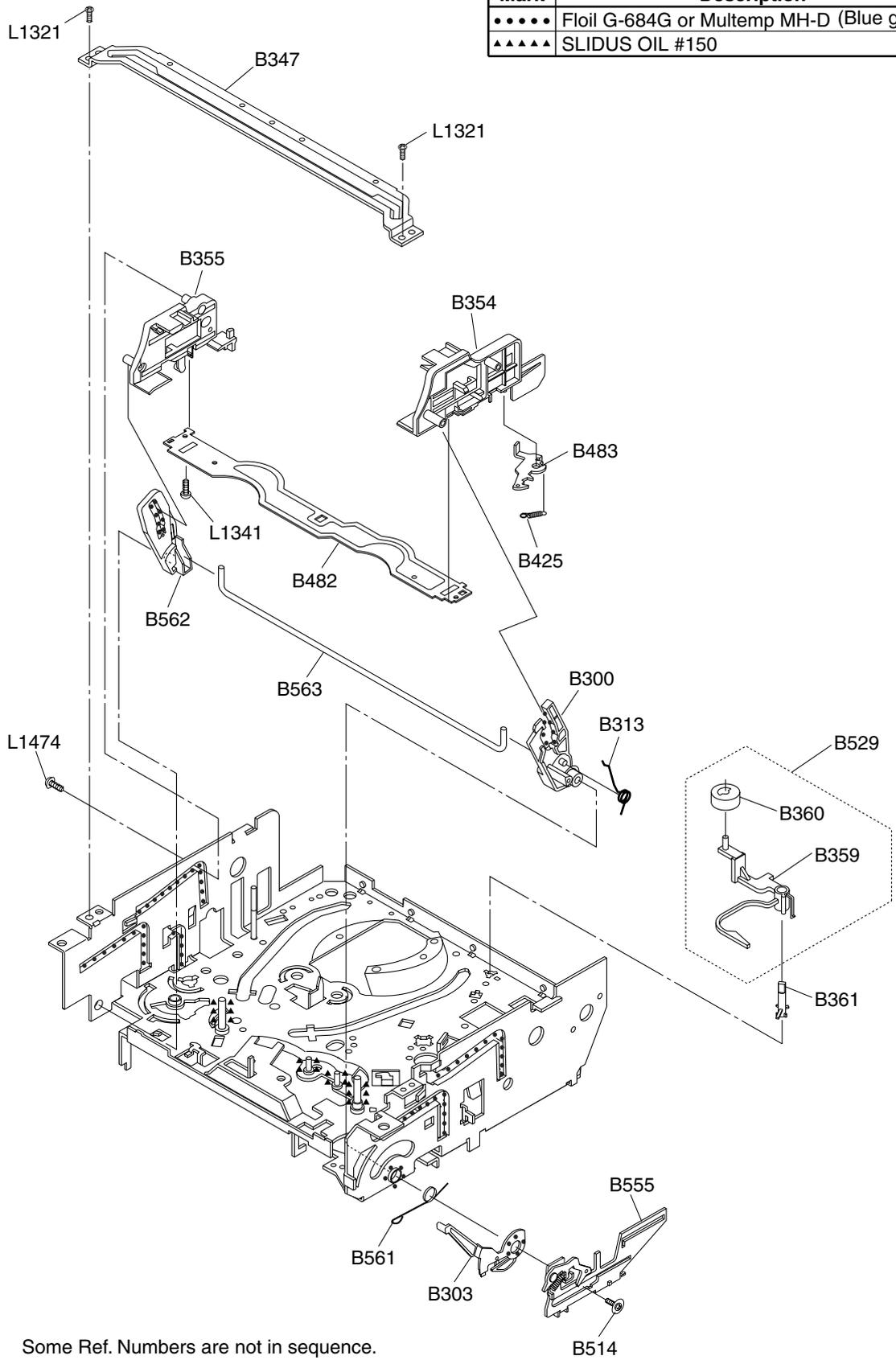
Some Ref. Numbers are not in sequence.

Deck Mechanism View 2



Deck Mechanism View 3

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



DECK PARTS LIST			
Pos.	▲	12 NC	Description
B2		9965 000 23417	CYLINDER ASS. .5 PAL 2HD 2SP
B3		9965 000 17217	LOADING MOTOR ASS. TVCR
B8		9965 000 17191	PULLEY ASS.
B9		9965 000 16632	MOVING GUIDE S PREP.
B10		9965 000 16633	MOVING GUIDE T PREP.
B11		9965 000 16634	LOADING ARM(TU) ASS.
B12		9965 000 16635	LOADING ARM(SP) ASS.
B31		9965 000 23553	AC HEAD ASS.
B35		9965 000 23382	TAPE GUIDE ARM ASS.
B37		9965 000 23554	CAPSTAN MOTOR
B52		9965 000 08593	CAP BELT
B73		9965 000 12210	FE HEAD ASS.
B74		9965 000 08555	PRISM
B121		9965 000 16640	WORM
B126		9965 000 18128	PULLEY
B133		9965 000 17193	IDLER GEAR
B134		9965 000 17194	IDLER ARM
B148		9965 000 12368	TG CAP
B300		9965 000 16643	C DRIVE LEVER(TU)
B303		9965 000 18129	F DOOR OPENER
B313		9965 000 16645	C DRIVE SPRING
B347		9965 000 08445	GUIDE HOLDER A
B354		9965 000 18130	SLIDER(TU)
B355		9965 000 23555	SLIDER(SP)
B359		9965 000 08449	CLEANER LEVER
B360		9965 000 06561	CLEANER ROLLER MK9
B361		9965 000 08450	CL POST
B410		9965 000 16648	PINCH ARM(A) ASS.
B411		9965 000 16649	PINCH SPRING
B414		9965 000 23419	M BRAKE(SP) ASS.
B416		9965 000 17196	M BRAKE(TU) ASS.
B417		9965 000 23371	TENSION SPG
B425		9965 000 08457	LOCK LEVER SPRING
B426		9965 000 08458	KICK PULLEY
B482		9965 000 16653	CASSETTE PLATE
B483		9965 000 16654	LOCK LEVER
B487		9965 000 16655	BAND BRAKE(SP)
B488		9965 000 23420	MODE LEVER .5
B491		9965 000 17199	CAM GEAR(A)
B492		9965 000 16658	MODE GEAR
B494		9965 000 16659	C DOOR OPENER
B499		9965 000 16660	T LEVER HOLDER
B501		9965 000 16661	WORM HOLDER
B502		9965 000 17200	CAM GEAR(B)
B507		9965 000 05342	REEL WASHER MK9 5*2.1*0.5
B508		9965 000 08470	S BRAKE SPRING
B513		9965 000 17201	CAM WASHER
B514		9965 000 08641	SCREW RACK
B516		9965 000 05342	REEL WASHER MK9 5*2.1*0.5
B520		9965 000 17202	TU BRAKE SPRING
B521		9965 000 16662	REV BRAKE SPRING

DECK PARTS LIST			
Pos.	▲	12 NC	Description
B522		9965 000 12373	TG POST ASS.
B525		9965 000 12230	LDG BELT
B529		9965 000 08504	CLEANER ASS.
B553		9965 000 12233	REV SPRING
B555		9965 000 16663	RACK ASS.
B557		9965 000 08519	MOTOR PULLEY U5
B558		9965 000 18131	LOADING MOTOR
B559		9965 000 17204	CLUTCH ASS.
B560		9965 000 08522	KICK SPRING
B561		9965 000 08523	F DOOR SPRING
B562		9965 000 16665	C DRIVE LEVER(SP)
B563		9965 000 16666	SLIDER SHAFT
B564		9965 000 17205	M GEAR
B565		9965 000 17206	SENSOR GEAR
B567		9965 000 16669	PINCH ARM(B)
B568		9965 000 16670	BT ARM
B569		9965 000 17207	CAM HOLDER(F)
B570		9965 000 12240	CAM RACK SPRING(HI)
B571		4822 532 13159	P.S.W CUT 1.6X4.0X0.5T
B573		9965 000 17208	REEL(SP)(D2)
B574		9965 000 17209	REEL(TU)(D2)
B587		9965 000 16674	TENSION LEVER ASS.
B590		9965 000 18132	BRAKE ARM(TU)
B591		9965 000 17210	BAND BRAKE(TU)
B592		9965 000 17211	TG POST
L1051		9965 000 05359	SCREW, B-TIGHT M2.6X6 PAN HEAD+
L1053		9965 000 05375	SCREW, S-TIGHT M2.6X8 WASHER HEAD+
L1151		9965 000 08642	SCREW, SEMS M3X4 PAN HEAD +
L1191		9965 000 05375	SCREW, S-TIGHT M2.6X8 WASHER HEAD+
L1321		4822 502 14009	SCREW, S-TIGHT M3X6 BIND HEAD+
L1341		9965 000 23375	SCREW, P-TIGHT M2X6 PAN HEAD+
L1406		9965 000 08643	AC HEAD SCREW MK9
L1450		4822 502 14671	SCREW, SEMS M2.6X5 PAN HEAD+
L1466		9965 000 05364	SCREW, S-TIGHT M2.6X6 BIND HEAD+
L1467		9965 000 23376	SCREW M2.6X5 WASHER HEAD+
L1474		4822 502 14019	SCREW, P-TIGHT M2.6X12 WASHER HEAD+