

SYLVANIA

SERVICE MANUAL

Sec. 1: Main Section

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

Sec. 2: Deck Mechanism Section

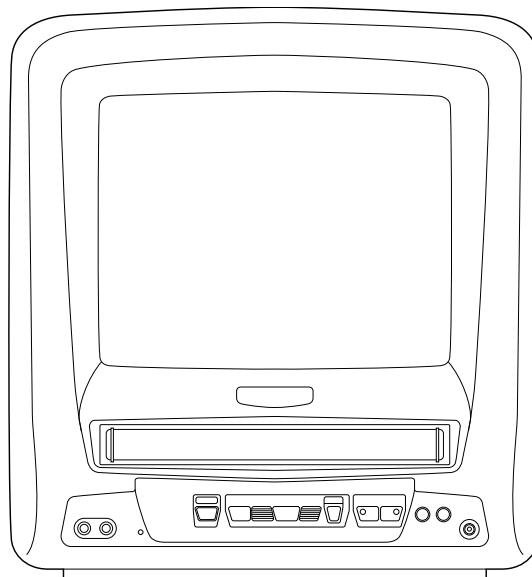
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism

Sec. 3: Exploded Views and Parts List Section

- Exploded Views
- Parts List

9" COLOR TV/VCR COMBINATION

6309CCB



IMPORTANT SAFETY NOTICE

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

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

MAIN SECTION

9" COLOR TV/VCR COMBINATION

6309CCB

Sec. 1: Main Section

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

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SPECIFICATIONS

* Mode -----SP mode unless otherwise specified

* Test input terminal

<Except Tuner> -----Video input (1Vp-p)

Audio input (-10dB)

<Tuner> -----Ant. input (80dB μ V) Video: 87.5%

Audio: 25kHz dev (1kHz Sin)

<DEFLECTION>

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	\pm 5
2. Linearity	Horizontal	%	—	12
	Vertical	%	—	10
3. High Voltage	—	kV	18	—

<VIDEO & CHROMA>

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.3
	Corner	m/m	—	1.5
	Side	m/m	—	1.2
2. Tint Control Range	—	deg	\pm 30	—
3. Contrast Control Range	—	dB	6	—
4. Brightness	APL 100%	ft-L	30	—
5. Color Temperature	—	K	9200	—

<VCR>

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution	(R/P)	Line	230	200
2. Jitter (Low)	(R/P)	μ S	0.05	0.2
3. S/N Chroma	AM (SP)	dB	38	33
	PM (SP)	dB	36	33
4. Wow & Flutter (RMS)	(R/P)	%	0.25	0.5

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Video S/N	—	dB	45	40
2. Audio S/N (W/LPF)	—	dB	43	40

<AUDIO>

All items are measured across 8Ω resistor at speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power (Max.)	(R/P)	W	0.8	0.6
2. Audio S/N (W/LPF)	(R/P)	dB	40	36
3. Audio Distortion (W/LPF)	(R/P)	%	3.0	5.0
4. Audio Freq. Response (-10dB Ref. 1KHz)	200Hz (R/P) 8kHz (R/P)	dB dB	-2.0 0	-2.0 ± 5.0 0 ± 6.0

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

IMPORTANT SAFETY PRECAUTIONS

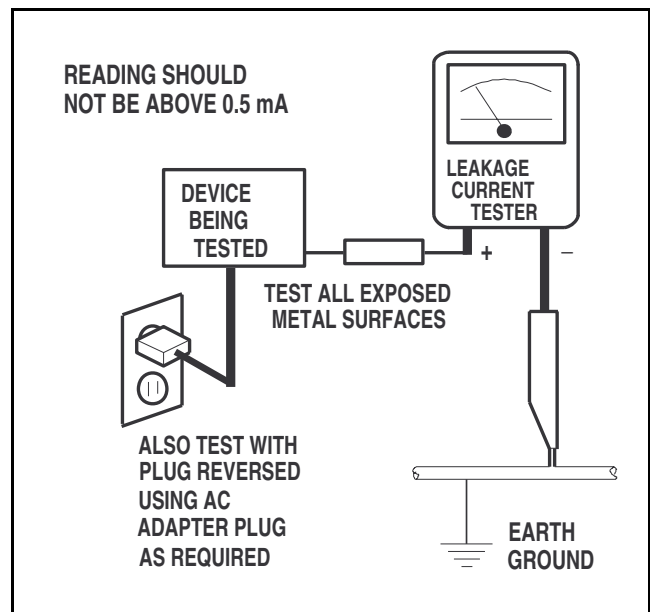
Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

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, non-metallic 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 leakage

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 servicing

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 confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the (▲) symbol are critical for safety.

Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

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

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulators for transistors.

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

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

G. Check that replaced wires do not contact sharp 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	Region	Clearance Distance (d) (d')
110 to 130 V	USA or CANADA	≥ 3.2 mm (0.126 inches)

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

2. Leakage Current Test

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

Measuring Method : (Power ON)

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

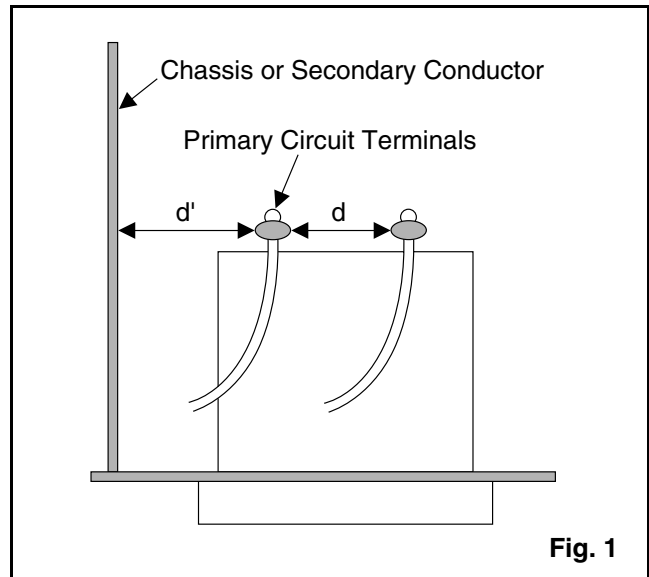


Fig. 1

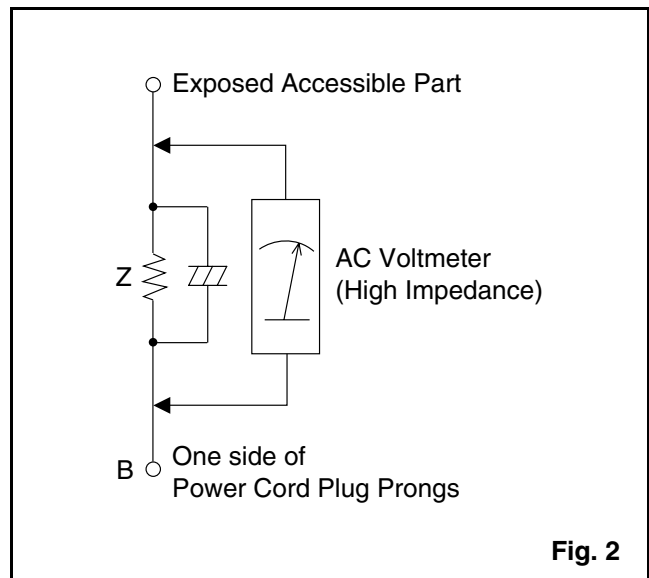


Fig. 2

Table 2 : Leakage current ratings for selected areas

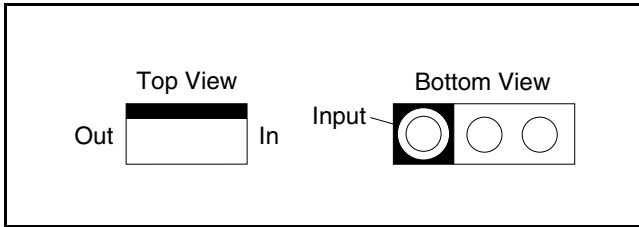
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	USA or CANADA	0.15 μ F CAP. & 1.5k Ω RES. connected in parallel	$i \leq 0.5$ mA rms	Exposed accessible parts

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

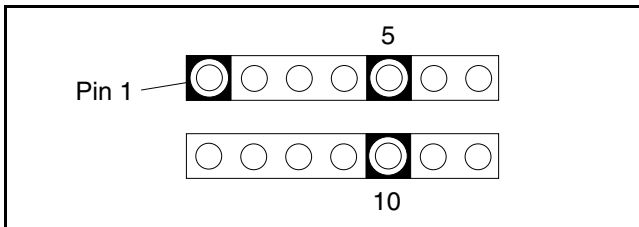
STANDARD NOTES FOR SERVICING

Circuit Board Indications

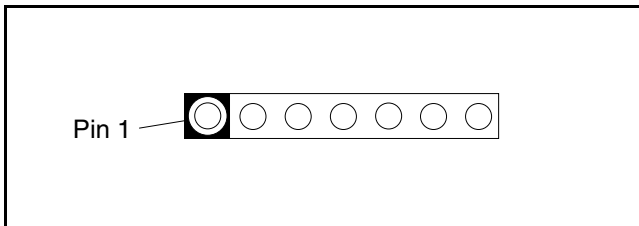
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



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

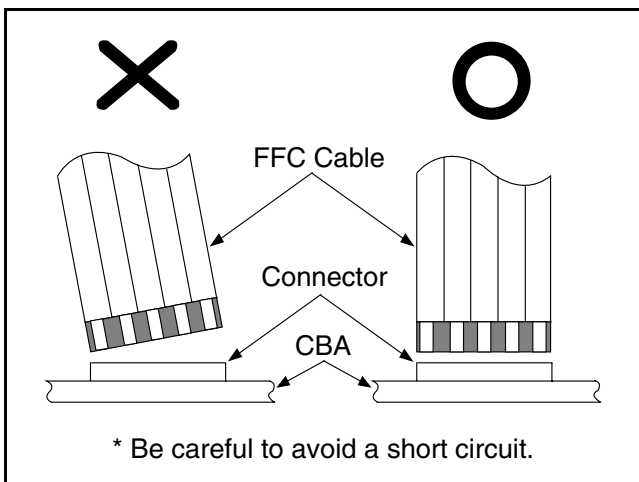


3. The 1st pin of every pin connector are indicated as shown:



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.



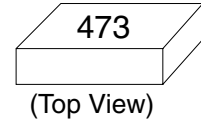
[CBA= Circuit Board Assembly]

How to Read the Values of the Rectangular Type Chip Components

Example:

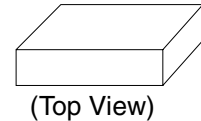
- (a) Resistor

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



- (b) Capacitor

= Not Shown



Caution:

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

Replacement Procedures for Leadless (Chip) Components

The Following Procedures are Recommended for the Replacement of the Leadless Components Used in this Unit.

1. Preparation for replacement

- a. Soldering Iron
Use a pencil-type soldering iron (less than 30 watts).
- b. Solder
Eutectic solder (Tin 63%, Lead 37%) is recommended.
- c. Soldering time
Do not apply heat for more than 4 seconds.
- d. Preheating
Leadless 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:

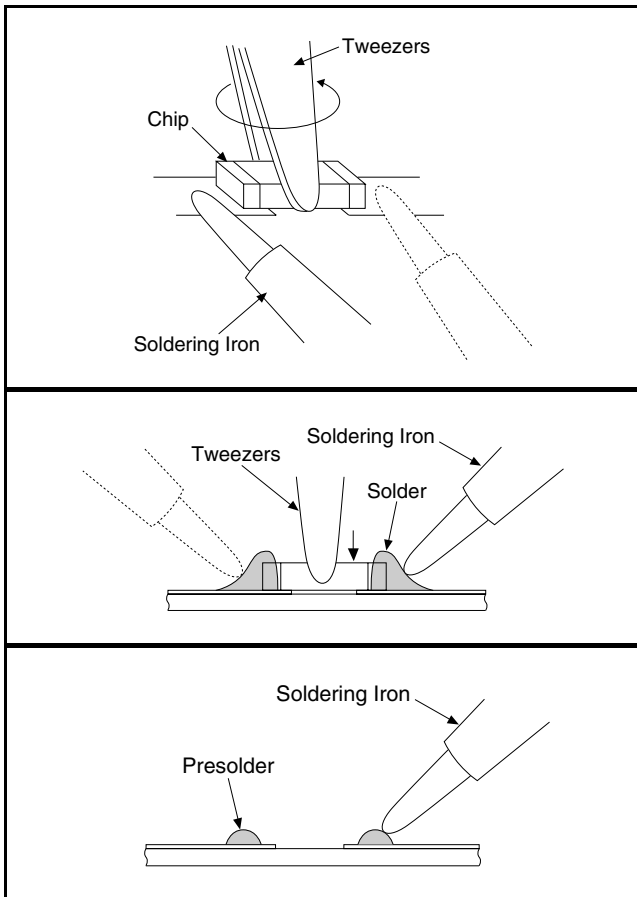
- a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.
- b. Take care not to break the copper foil on the printed board.

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. 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)
- 2. The Flat Pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or 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:

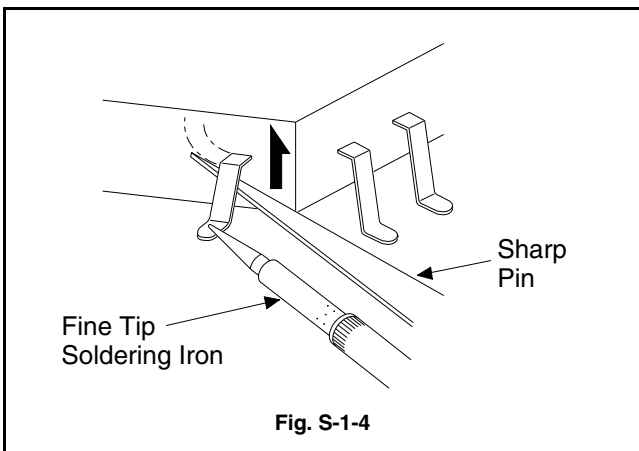
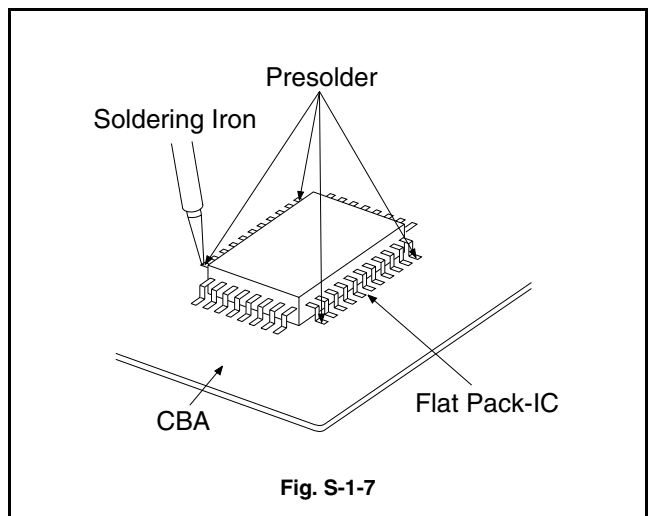
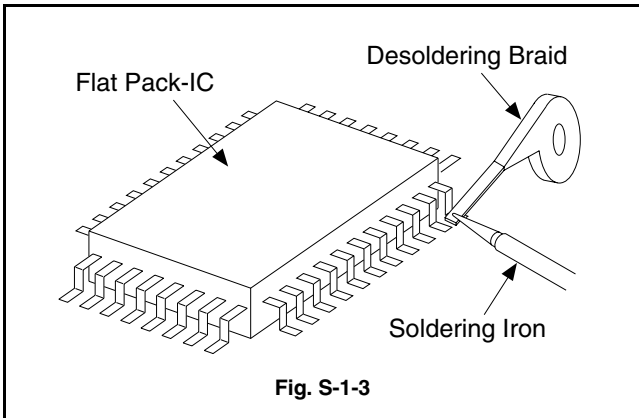
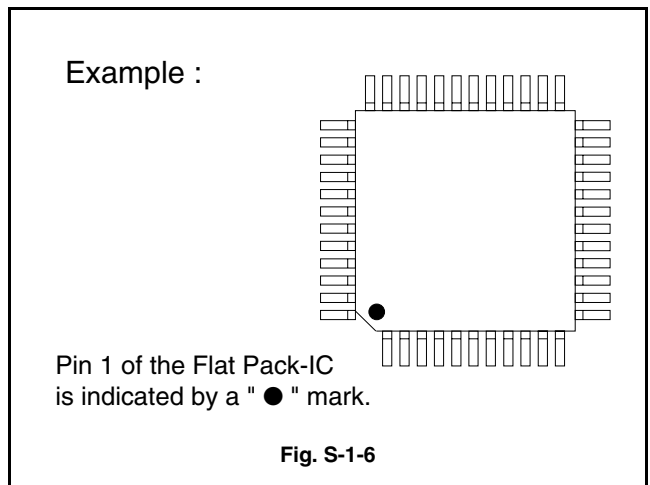
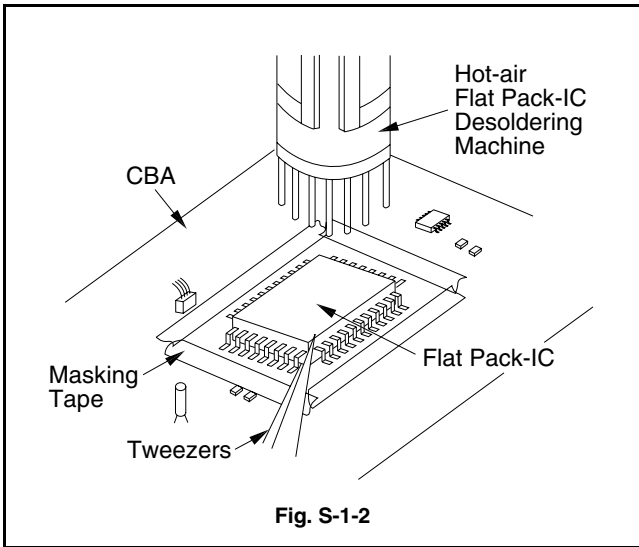
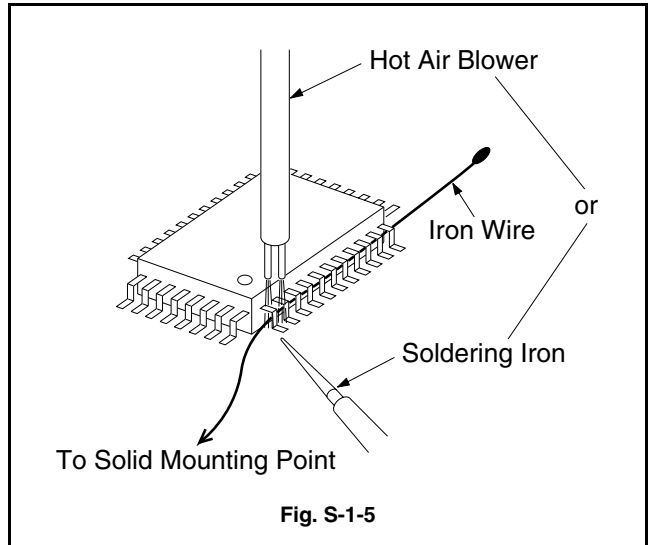
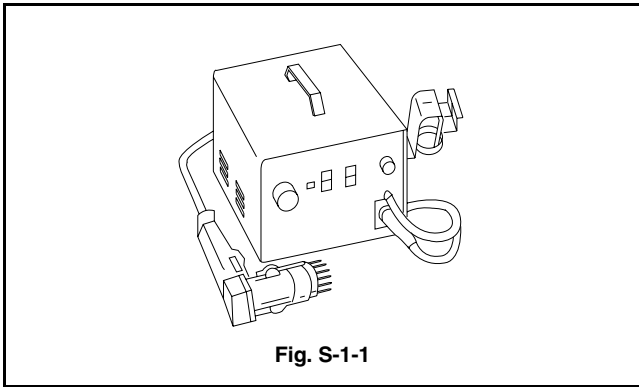
- a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)
- b. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
- c. Pull up on 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.

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.



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.

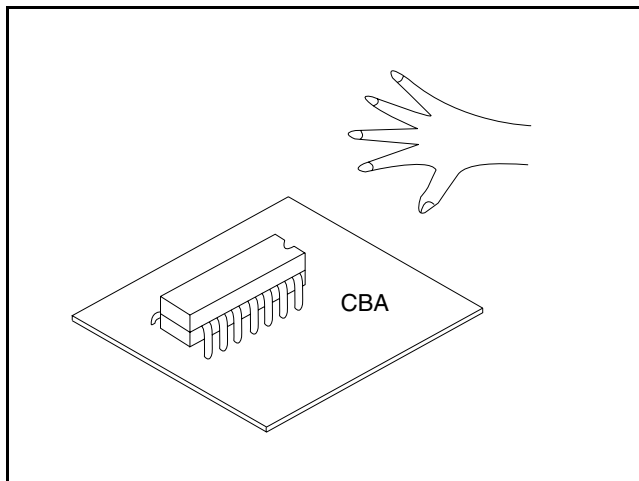
Ground for Human Body

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

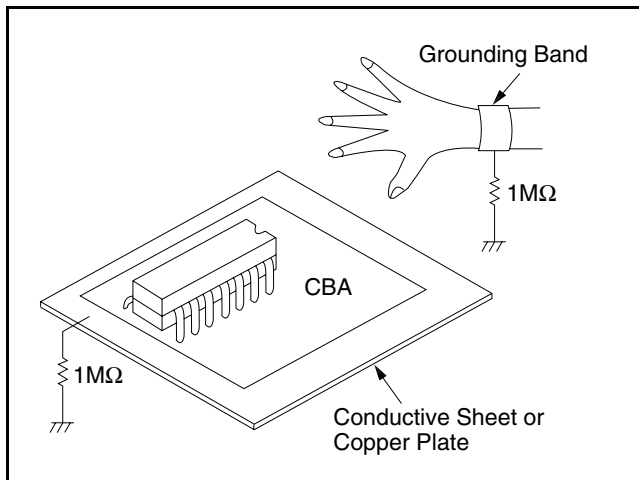
Ground for Work Bench

Be sure to place a conductive sheet or copper plate with proper grounding ($1M\Omega$) 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.

Incorrect



Correct



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 power on.
- Use service remote control unit and press WAKE-UP/SLEEP key. (See page 1-7-1)
- When entering the service mode, one of the number (1, 2 or 4) will display at corners of the screen.
- During the service mode, electrical adjustment mode can be selected by remote control key. (Service remote control unit).

Details are as follows.

Key	Adjustment Mode
MENU	Picture adjustment mode : Press the MENU button to change from BRT (Bright), *CNT (Contrast), *CLR (Color), *TNT (Tint) and *V-T. Press CH UP/DOWN key to display Initial Value, Maximum and Minimum cyclically. *Marked items are not necessary to adjust normally.
0	C-Trap adjustment mode: See adjustment instructions page 1-7-2 .
1	No need to use.
2	AGC/H adjustment mode: See adjustment instructions page 1-7-2.
3	Auto AFT adjustment mode: See adjustment instructions page 1-7-1.
4	Auto record mode: Perform recording (15 Sec.)-->Stop-->Rewind (Zero return) automatically.
5	Head switching point adjustment mode: See adjustment instructions page 1-7-5.

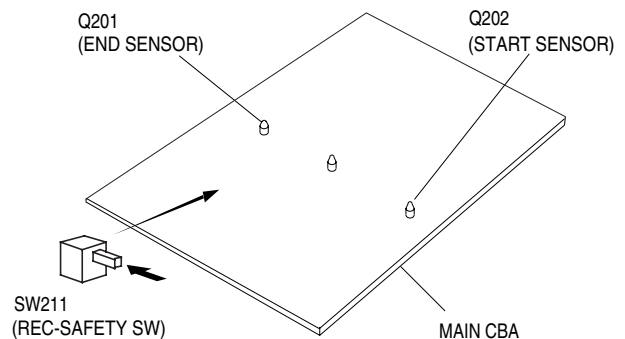
Key	Adjustment Mode
6	No need to use.
7	Purity check mode: Shows Red, Green or Blue on the screen when the CH UP/DOWN keys are pressed.
8	H. Shift adjustment mode: See adjustment instructions page 1-7-3.
9	V.size/V. shift adjustment: See adjustment instructions page 1-7-3.
VOL ▼	Cut-off Adjustment 1-7-4.

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.



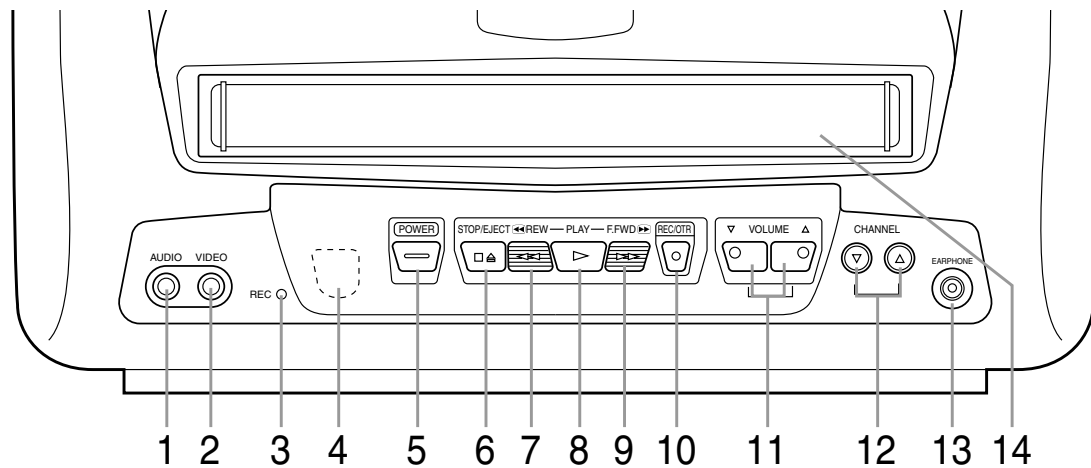
OPERATING CONTROLS AND FUNCTIONS

NOTE:

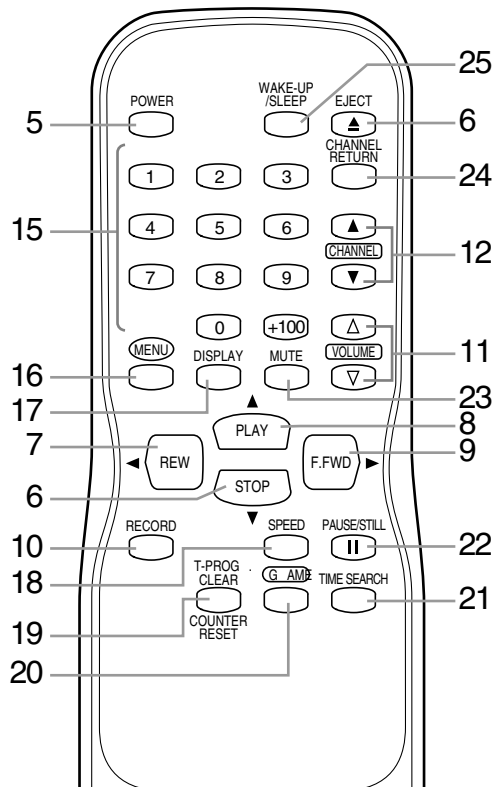
- We do not recommend the use of universal remote controls. Not all of the functions may be controlled with a universal remote control.

If you decide to use a universal remote control with this unit, please be aware that the code number given may not operate this unit. In this case, please call the manufacturer of the universal remote control.

- TV/VCR FRONT PANEL -



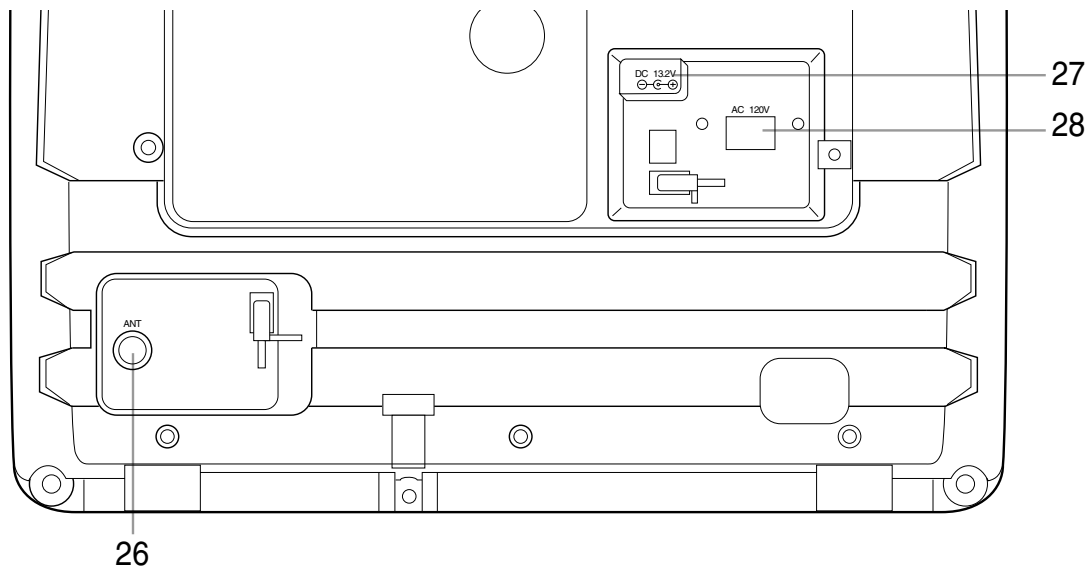
- REMOTE CONTROL -



Part No.
N0111UD or N0151UD

- 1 AUDIO input jack**– Connect to the audio output jack of your audio equipment, video camera or another VCR.
- 2 VIDEO input jack**– Connect to the video output jack of your video camera or another VCR.
- 3 RECORD indicator**– Flashes during recording. Lights up in the Stand-by mode for Timer Recording.
- 4 Remote Sensor Window**– Receives the infrared signals from the remote control.
- 5 POWER button**– Press to turn TV/VCR on and off. Press to activate timer recording.
- 6 STOP button**– Press to stop the tape motion.
EJECT button– Press in the Stop mode to remove tape from TV/VCR.
- ▼ button**–
 - Press to select setting modes from the on screen menu.
 - Press to enter digits when setting program. (for example: setting clock or timer program)
- 7 REW button**– Press to rewind the tape, or to view the picture rapidly in reverse during playback mode. (Rewind Search)
- ◀ button**–
 - Press to select a mode from a particular menu. (for example: LANGUAGE or USER'S SET UP)
- 8 PLAY button**– Press to begin playback.
- ▲ button**–
 - Press to select setting modes from the on screen menu.
 - Press to enter digits when setting program. (for example: setting clock or timer program)

- REAR VIEW -



9 F.FWD button– Press to rapidly advance the tape, or to view the picture rapidly in forward during playback mode. (Forward Search)

▶ button–

- When setting program (for example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input.
- Press to determine setting modes from on screen menu.
- Press to select a mode from a particular menu. (for example: LANGUAGE or USER'S SET UP)

10 REC button– Press for manual recording.

OTR button– Activates One Touch Recording. (only on the TV/VCR)

11 VOLUME Δ / ∇ buttons– Adjust the volume level.

12 CHANNEL \blacktriangle / \blacktriangledown buttons– Press to select the desired channels for viewing or recording.

You may display the main menu on the TV screen by pressing repeatedly this button on the TV/VCR.

TRACKING function– Press to minimize video 'noise' (lines or dots on screen) during playback mode. (See page 19.)

13 EARPHONE jack– Connects to earphones (not supplied) for personal listening. The size of jack is 1/8" monaural (3.5mm).

14 Cassette compartment

15 Number buttons– Press to select desired channels for viewing or recording. To select channels from 1 to 9, first press the 0 button and then 1 to 9.

+100 button– When selecting cable channels which are higher than 99, press this button first, then press the last two digits. (To select channel 125, first press the "+100" button then press "2" and "5").

16 MENU button– Press to display the main menu on the TV screen.

17 DISPLAY button– Display the counter or the current channel number and current time on the TV screen.

18 SPEED button– Press to choose the desired recording.

19 T-PROG. CLEAR button– Press to cancel a setting of timer program.

COUNTER RESET button– Press to reset counter to 0:00:00.

20 GAME button– Sets the game mode and external input mode at the same time.

21 TIME SEARCH button– Press to activate Time Search mode.

22 PAUSE/STILL button– Press to temporarily stop the tape during the recording or to view a still picture during playback.

23 MUTE button– Mutes the sound. Press it again to resume sound.

24 CHANNEL RETURN button– Press to go back to the previously viewed channel. For example, pressing this button once will change channel display from 3 (present channel) to 10 (previously viewed channel), and pressing it a second time will return from 10 to 3.

25 WAKE-UP/SLEEP button– Sets the Wake up or Sleep Timer.

26 ANT. terminal– Connect to an antenna or cable system.

27 DC 13.2V jack– Connect to the Car Battery Cord.

28 AC 120V jack– Connect to the AC cord.

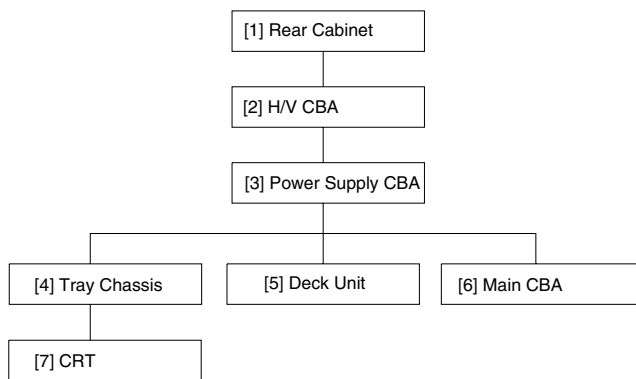
CABINET DISASSEMBLY INSTRUCTIONS

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.

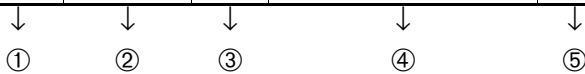
Caution !!

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



2. Disassembly Method

STEP/ LOC. NO.	PART	REMOVAL		
		FIG. NO.	REMOVE/*UNLOCK/ RELEASE/UNPLUG/ UNCLAMP/DESOLDER	NOTE
[1]	Rear Cabinet	1, 2	4(S-1), 1(S-2), 2(S-3)	1
[2]	H/V CBA	3, 5	Anode Cap, CRT CBA, CL501A, CN503, CN571, CN575, CN602, Unclamp H/V CBA	2
[3]	Power SupplyCBA	3, 5	CN1601, CN603, 3(S-5), 2(L-1), 2(S-6)	3
[4]	Tray Chassis	3, 5	CN802	4
[5]	Deck Unit	3, 6	(S-7), 1(S-8), 1(S-9)	5
[6]	Main CBA	3,5	4(S-10)	6
[7]	CRT	4	4(S-11)	7

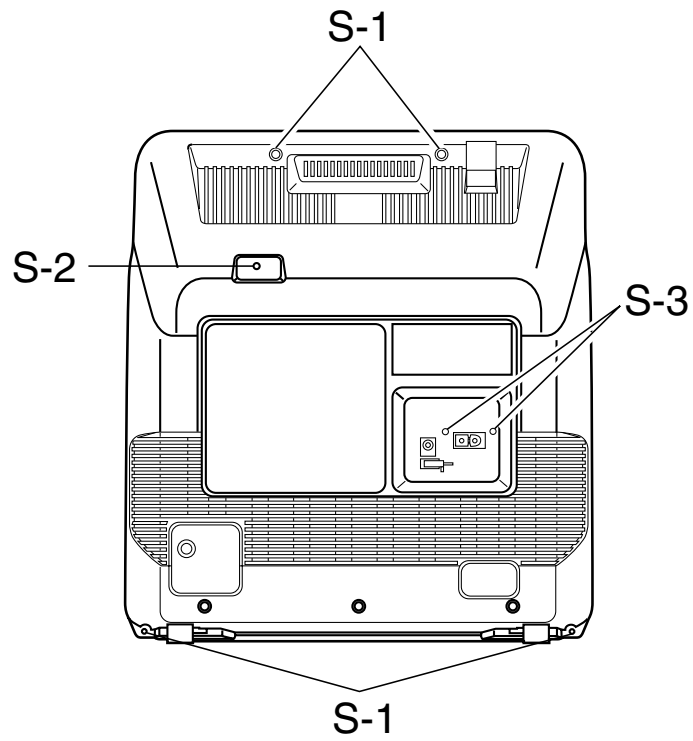


Note :

- ①. Order of steps in Procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the identification (location) No. of parts in Figures.
- ②. 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" following.

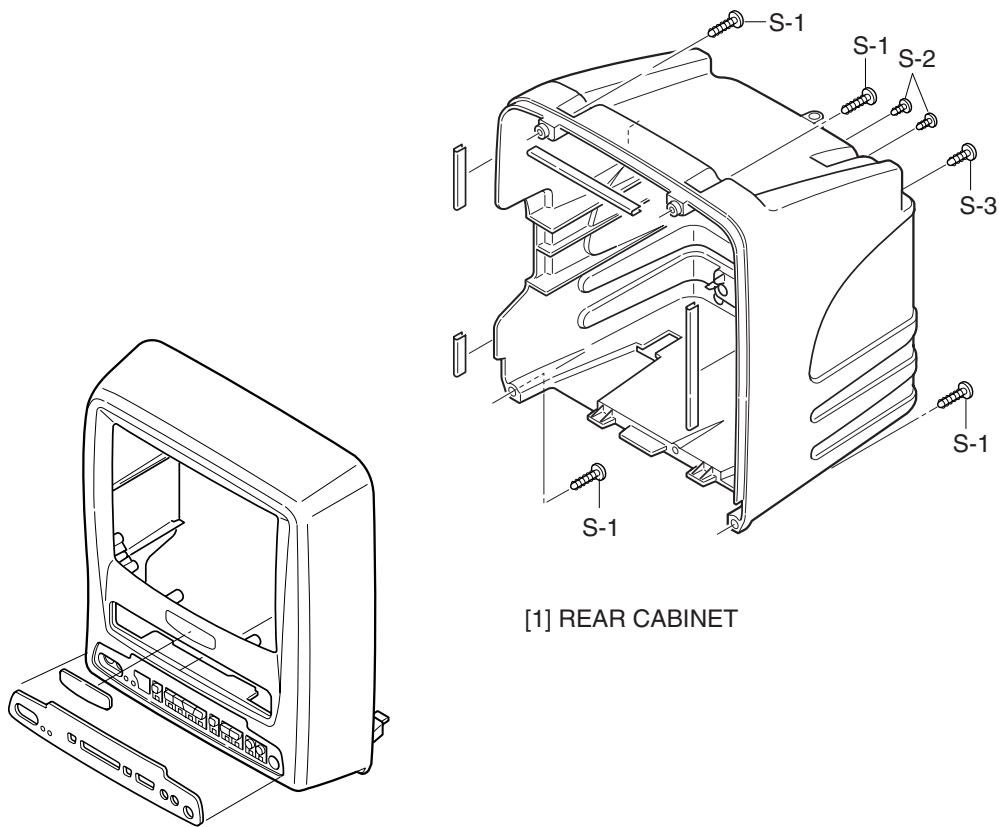
Reference Notes in the Table

1. Removal of the Rear Cabinet. Remove screws 4(S-1), 1(S-2) and 2(S-3).
2. Removal of the H/V CBA. Disconnect the Anode Lead of the CRT with the CRT ground before removing the Anode Cap.
Disconnect the following: Anode Cap, CRT CBA, CL501A, CN503, CN571, CN575, CN602.
3. Removal of the Power Supply CBA. Disconnect CN1601 and CN603. Remove screw 2(S-5). Slide the Power Supply CBA Holder backward. Remove screw 3(S-6) and release 2(L-1). Pull the Power Supply CBA backward.
4. Removal of the Tray chassis. disconnect CN802. slide Tray chassis backward.
5. Removal of the Deck Unit. Remove screws 6(S-7), 1(S-8) and 1(S-9). Lift up the Deck Unit.
6. Removal of the Main CBA. Remove screws 4(S-10).
7. Removal of the CRT. Remove screws 4(S-11) and Pull the CRT backward.



[1] REAR CABINET

Fig. 1



[1] REAR CABINET

Fig. 2

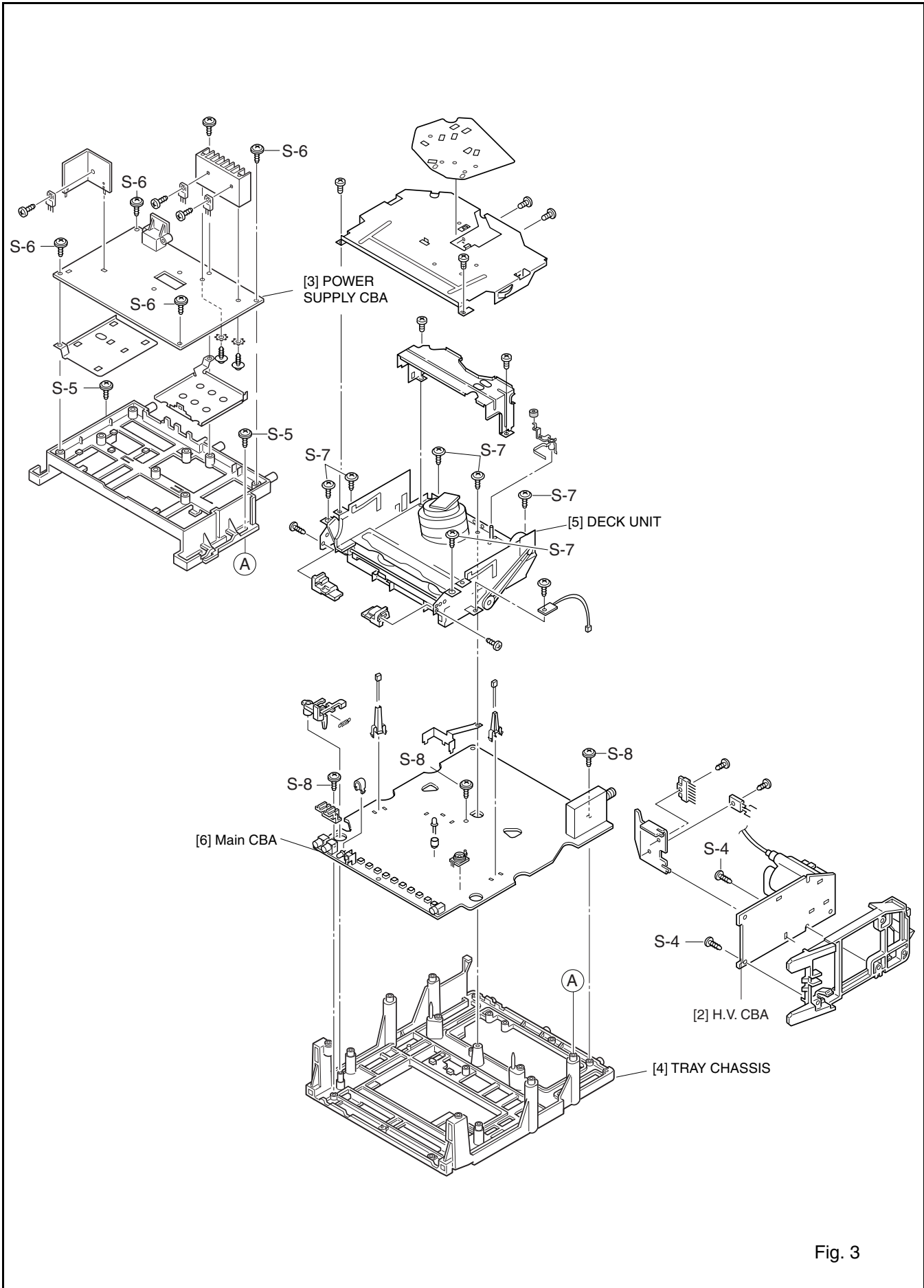


Fig. 3

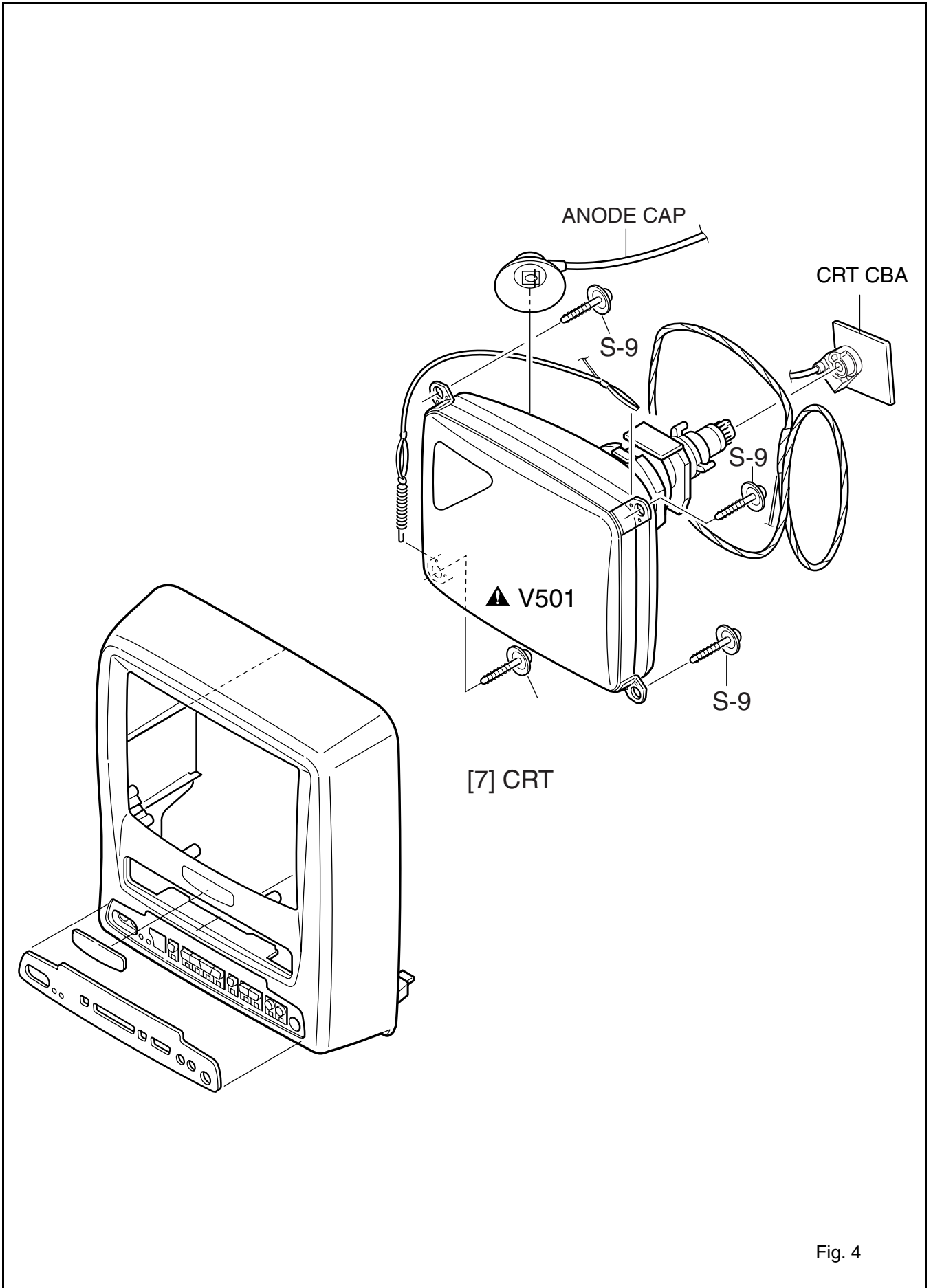


Fig. 4

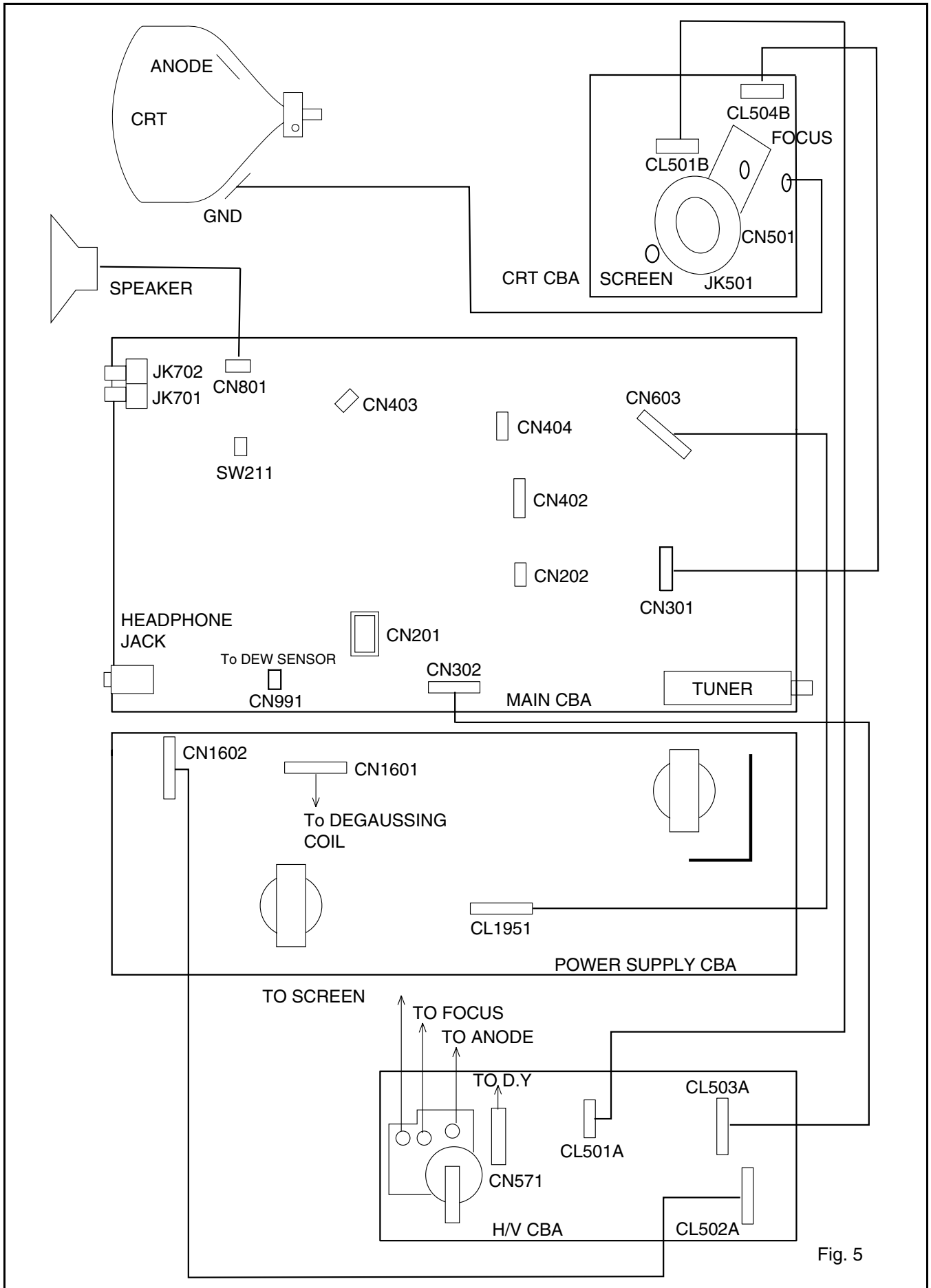


Fig. 5

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.

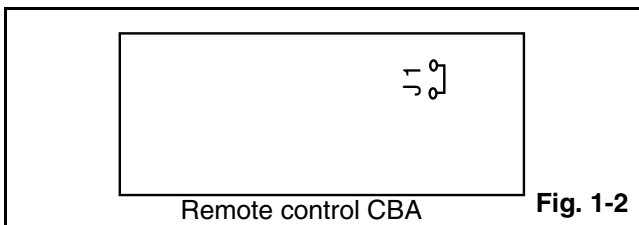
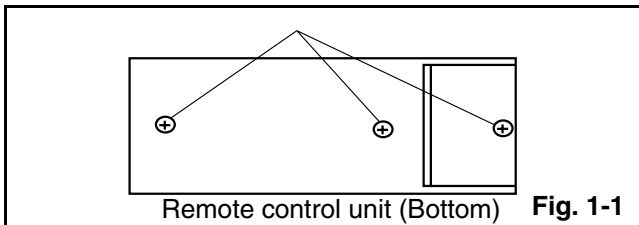
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. AC Milli Voltmeter (RMS)
3. Alignment Tape (FL8A, FL8N), Blank Tape
4. DC Voltmeter
5. Oscilloscope: Dual-trace with 10:1 probe, V-Range: 0.001~50V/Div, F-Range: DC~AC-60MHz
6. Frequency Counter
7. Plastic Tip Driver

How to make service remote control unit:

1. Prepare normal remote control unit. (Part No. N0111UD) Remove 3 screws from the back lid. (Fig. 1-1)
2. Added J1 (Jumper Wire) to the remote control CBA. (Fig. 1-2)



How to Set up the Service mode:

Service Mode:

1. Use the service remote control unit.
2. Turn the power on.
3. Press " WAKE-UP/SLEEP " button on the service remote control unit.

1a. DC 117V (+B) Adjustment (AC Power)

Purpose: To obtain correct operation.

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

Test Point	Adjustment Point	Mode	Input
J553 (+B) J563 (GND)	VR1620	---	---
Tape	M. EQ.	Spec.	
---	DC Voltmeter	+117±0.5V DC	

Note: J553(+B), J563(GND) --- H.V. CBA
VR1620 --- Power Supply CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to J553(+B) and J563(GND).
3. Adjust VR1620 so that the voltage of J553(+B) becomes +117±0.5V DC.

1b. DC 117V (+B) Adjustment (DC Power)

Purpose: To obtain correct operation.

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

Test Point	Adjustment Point	Mode	Input
J553 (+B) J563 (GND)	VR1951	---	---
Tape	M. EQ.	Spec.	
---	DC Voltmeter	+117±0.5V DC	

Note: J553(+B), J563(GND) --- H.V. CBA
VR1951 --- Power Supply CBA

1. Input 13.2V DC to DC Jack..
2. Connect DC Volt Meter to J553(+B) and J563(GND).
3. Adjust VR1951 so that the voltage of J553(+B) becomes +117±0.5V DC.

2. Auto AFT (VCO) Adjustment

Purpose: To operate AFT correctly.

Symptom of Misadjustment: AFT does not work correctly and/or synchronization is faulty.

Test Point	Adjustment Point	Mode	Input
---	---	VIDEO	---
Tape	M. EQ.	Spec.	
---	---	---	

1. Set the unit to the VIDEO mode with no signal input.
2. Enter the Service mode. (See page 1-4-1) Then press number "3" button on the remote control unit.
3. If the screen color changes to "Green" then this adjustment is finished.
4. If the screen color changes to "Red" then this adjustment is failed. Repeat steps 1 and 2 or check relative circuit or parts (IC).

3. TV AGC Adjustment

Purpose: Set AGC (Auto Gain Control) Level.

Symptom of Misadjustment: AGC does not synchronize correctly when RF input level is too weak and picture distortion may occur if it is too strong.

Test Point	Adjustment Point	Mode	Input
AGC	CH. ▲ / ▼ buttons	---	Color Bar 67.25MHz 60dB μ V
Tape	M. EQ.	Spec.	
---	Pattern Generator DC Volt Meter	+2.8V \pm 0.3VDC +2.8V \pm 0.3VDC +2.8V \pm 0.3VDC	

Notes: AGC --- Main CBA

1. Enter the Service mode. (See page 1-4-1) Then press number "2" button on the remote control unit.
2. Receive the Color Bar signal for channel 4 (67.25MHz). (RF Input Level: 60dB μ V)
- 3-1. Press CH. ▲ / ▼ buttons so that the voltage of AGC becomes +2.8V \pm 0.3V DC.
(Tuner Type No. TEDH9-300A)
- 3-2. Press CH. ▲ / ▼ buttons so that the voltage of AGC becomes +2.8V \pm 0.3V DC.
(Tuner Type No. B8055AR)
- 3-3. Press CH. ▲ / ▼ buttons so that the voltage of AGC becomes +2.8V \pm 0.3V DC.
(Tuner Type No. B8095AP)
4. Turn the power off and on again.

4-1. 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	Adjustment Point	Mode	Input
D302 CATHODE	CH ▲ / ▼ buttons	VIDEO	----
Tape	M. EQ.	Spec.	
----	Frequency Counter	15.734kHz \pm 300Hz	

Note: D302 CATHODE --- Main CBA

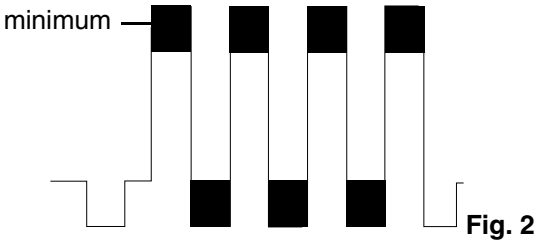
1. Connect Frequency Counter to INT. MONITOR.
2. Set the unit to the VIDEO mode and no input is necessary. Enter the Service mode.
(See page 1-4-1)
3. Operate the unit for at least 20 minutes.
4. Press "2" button on the remote control unit and select H-Adj Mode. (Press "2" button, then display will change H-Adj and AGC.)
5. Press CH ▲ / ▼ 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 15.734kHz \pm 300Hz.
6. Turn the power off and on again.

4-2. 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	Adjustment Point	Mode	Input
R515 (B-Out)	CH ▲ / ▼ buttons	---	Color Bar
Tape	M. EQ.	Spec.	
----	Oscilloscope	200mV P-P	



Note: R515 (B-Out)--- CRT CBA

1. Connect Oscilloscope to J070.
2. Input a color bar signal from RF input.
Enter the Service mode. (See page 1-4-1)
3. Press "0" button on the remote control unit and select C-TRAP Mode.
4. Press CH ▲ / ▼ buttons on the remote control unit so that the carrier leakage B-Out (3.58MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

5. 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	Adjustment Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

Note:

1. Enter the Service mode. (See page 1-4-1)
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.
3. Press CH ▲ / ▼ buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

6. 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	Adjustment Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

Note:

1. Enter the Service mode. (See page 1-4-1)
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.
3. Press CH ▲ / ▼ buttons on the remote control unit so that the top and bottom of the monoscope pattern are equal to each other.

7. 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	Adjustment Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.		Spec.
---	Pattern Generator		90±5%

Note:

1. Enter the Service mode. (See page 1-4-1)
Press "8" button on the remote control unit and select H-P Mode.
2. Input monoscope pattern.
3. Press CH ▲ / ▼ 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.

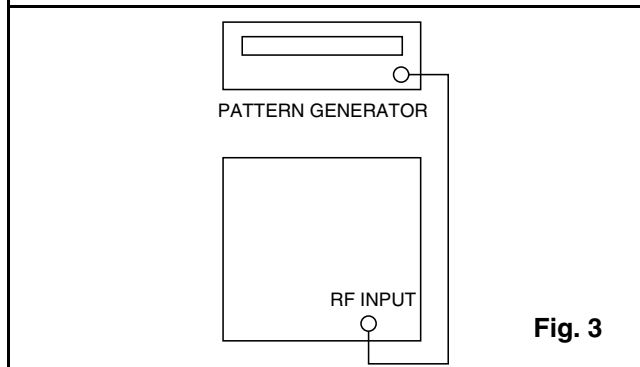
8. Cut-off Adjustment

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	Adjustment Point	Mode	Input
---	Screen-Control	Ext.	Black Raster / White Raster
Tape	M. EQ.		Spec.
---	Pattern Generator		See Reference Notes below.

Figure



Note: Screen Control FBT --- H/V CBA

F.B.T= 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 input.
3. Enter the Service Mode. (See page 1-4-1)
Dimmed horizontal line appears on the CRT.
4. Press the "VOL ▼" button.
(Press "VOL ▼" then display will change CUT OFF/DRIVE, VCO adjustment, Analog OSD adjustment).
5. Choose CUT OFF/DRIVE Mode then press "1" button. This adjustment mode is CUT OFF (R).
6. Press the "CH ▲ / ▼" button until the horizontal line becomes white.
7. Choose CUT OFF/DRIVE mode then press "2" button. This adjustment mode is CUT OFF (G). Press "CH ▲ / ▼" until the horizontal line becomes white.
8. Choose CUT OFF/DRIVE Mode then press "3" button. This adjustment mode is CUT OFF (B). Press "CH ▲ / ▼" until the horizontal line becomes white.
9. Input the White Raster Signal from Video In.
10. Choose CUT OFF/DRIVE mode then press "4." Adjust the RED DRIVE as needed with the CH ▲ / ▼ buttons.
11. Choose CUT OFF/DRIVE mode then press "5." Adjust the BLUE DRIVE as needed with the CH ▲ / ▼ buttons.
12. Turn the power off and on again.

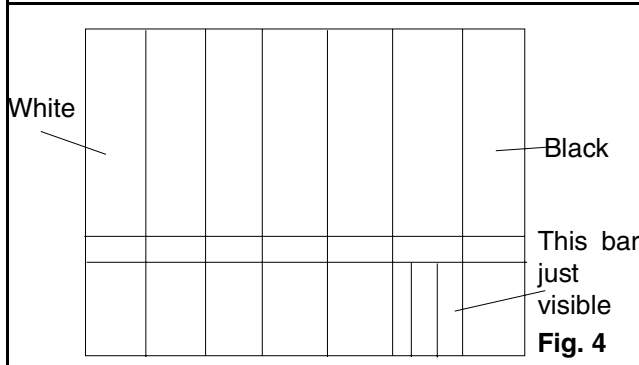
9. Sub-Brightness Adjustment

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	Adjustment Point	Mode	Input
---	CH ▲ / ▼ buttons	---	SYMPTE 7.5 IRE
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below	

Figure



Note: SYMPTE Setup level --- 7 IRE

1. Enter the Service Mode. (See page 1-4-1)
Then input SYMPTE signal from RF input.
2. Press MENU button. (Press MENU button then display will change B R T, C N T, COL, T N T, V-T and SHP). Select BRT and press CH ▲ / ▼ buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again.

10. Focus Adjustment

Purpose: Set the optimum Focus.

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

Test Point	Adjustment Point	Mode	Input
---	Focus Control	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	

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

11. Head Switching Position Adjustment

Purpose: Determine the Head Switching Point during Play back.

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).

1. Playback test tape (FL8A, FL8N).
2. Enter the Service Mode. (See page 1-4-1)
Then press the number 5 button on the remote control unit.
3. The Head Switching position will display on the screen; if adjustment is necessary follow step 4.
6.5H(412.7μs) is preferable.
4. Press "CH ▲" or "CH ▼" button 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
5. Turn the power off and on again.

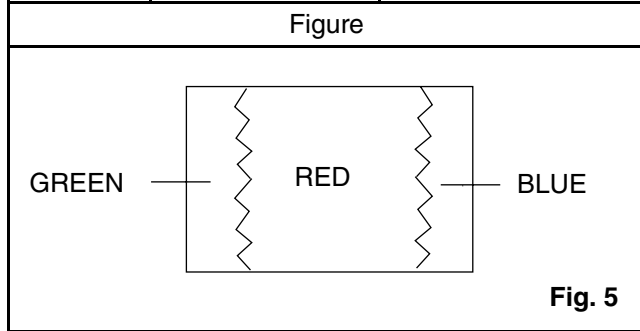
The following 2 adjustments normally are not attempted in the field. They should be done only when replacing the CRT then adjust as a preparation.

12. Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

Test Point	Adjustment Point	Mode	Input
---	Deflection Yoke Purity Magnet	---	*Red Color
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	



* This becomes RED COLOR if push 7KEY with a service mode.

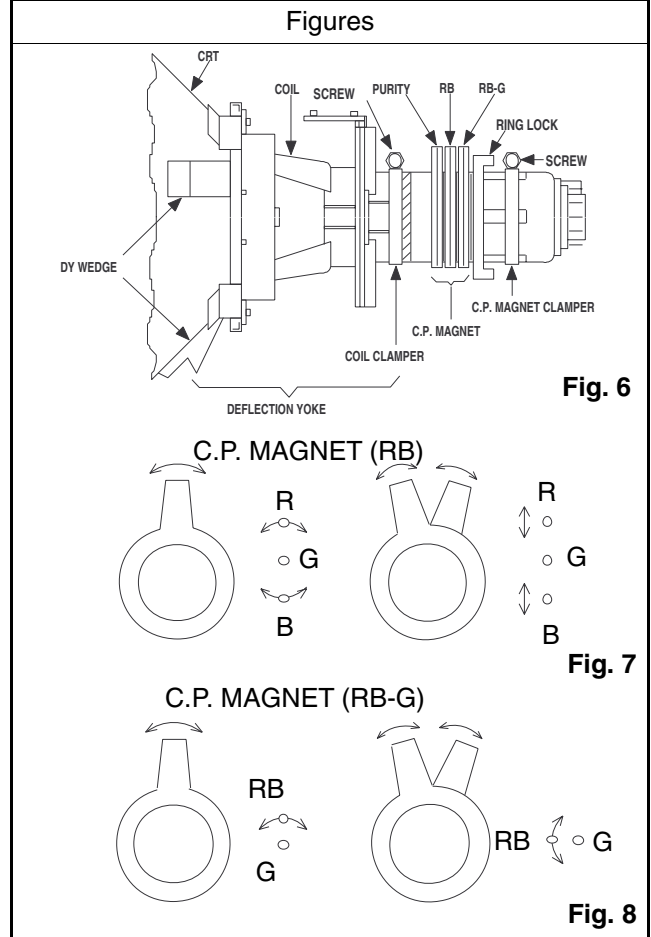
1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.
4. Set the unit to the AUX Mode which is located before CH2 then input a red raster from video in.
5. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 6)
6. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 5,6)
7. Slowly push the Deflection Yoke toward the bell of the CRT and set it where a uniform red field is obtained.
8. Tighten the clamp screw on the Deflection Yoke.

13. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

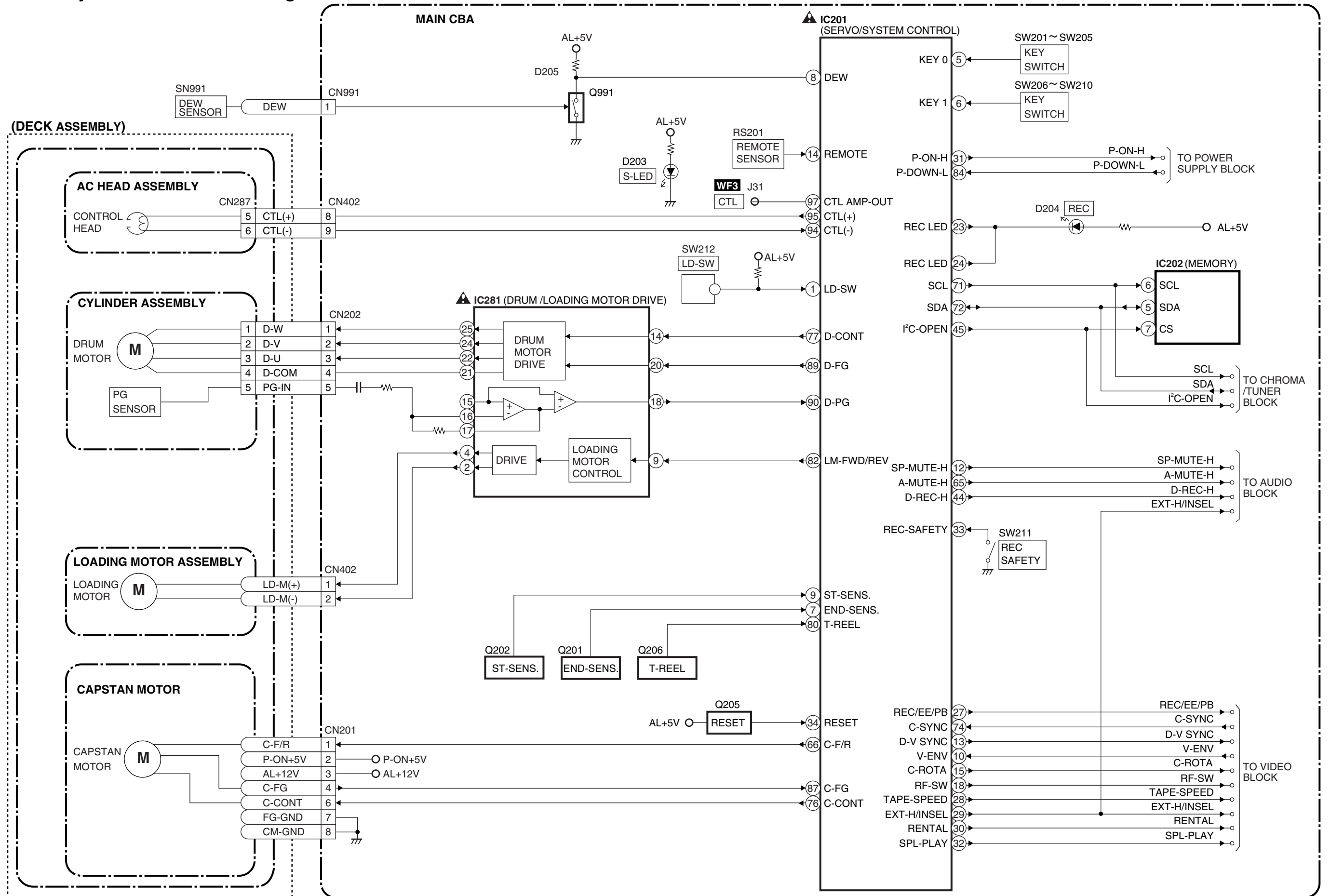
Test Point	Adjustment Point	Mode	Input
---	C.P. Magnet (RB), C.P. Magnet (RB-G), Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	



1. Set the unit to the AUX Mode which is located before CH2 then input a Dot or crosshatch pattern.
2. Loosen the Ring Lock and align red with blue dots or Crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 7)
3. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 8)
4. Fix the C.P. Magnets by tightening the Ring Lock.
5. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
6. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

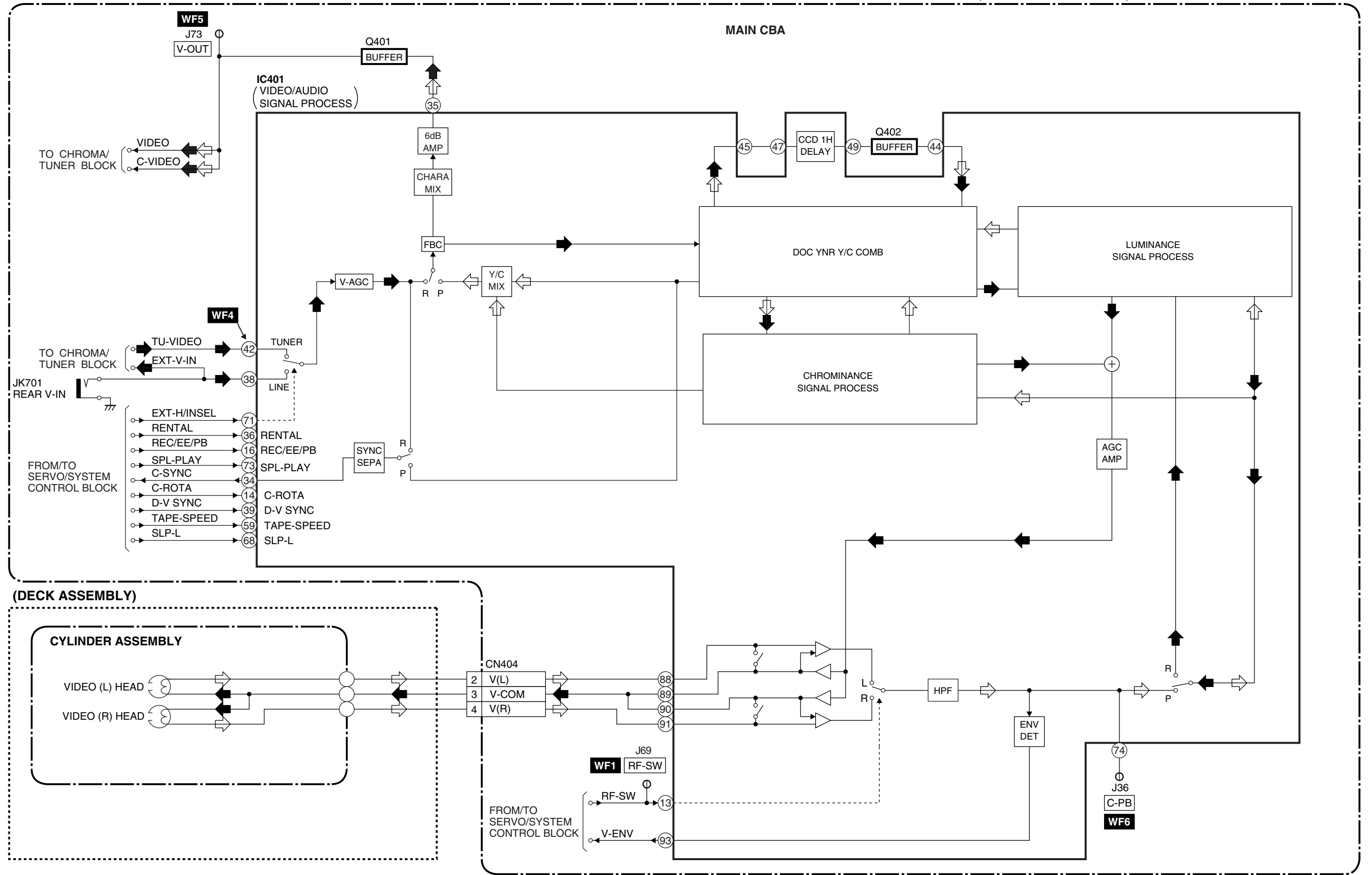
BLOCK DIAGRAMS

Servo/System Control Block Diagram

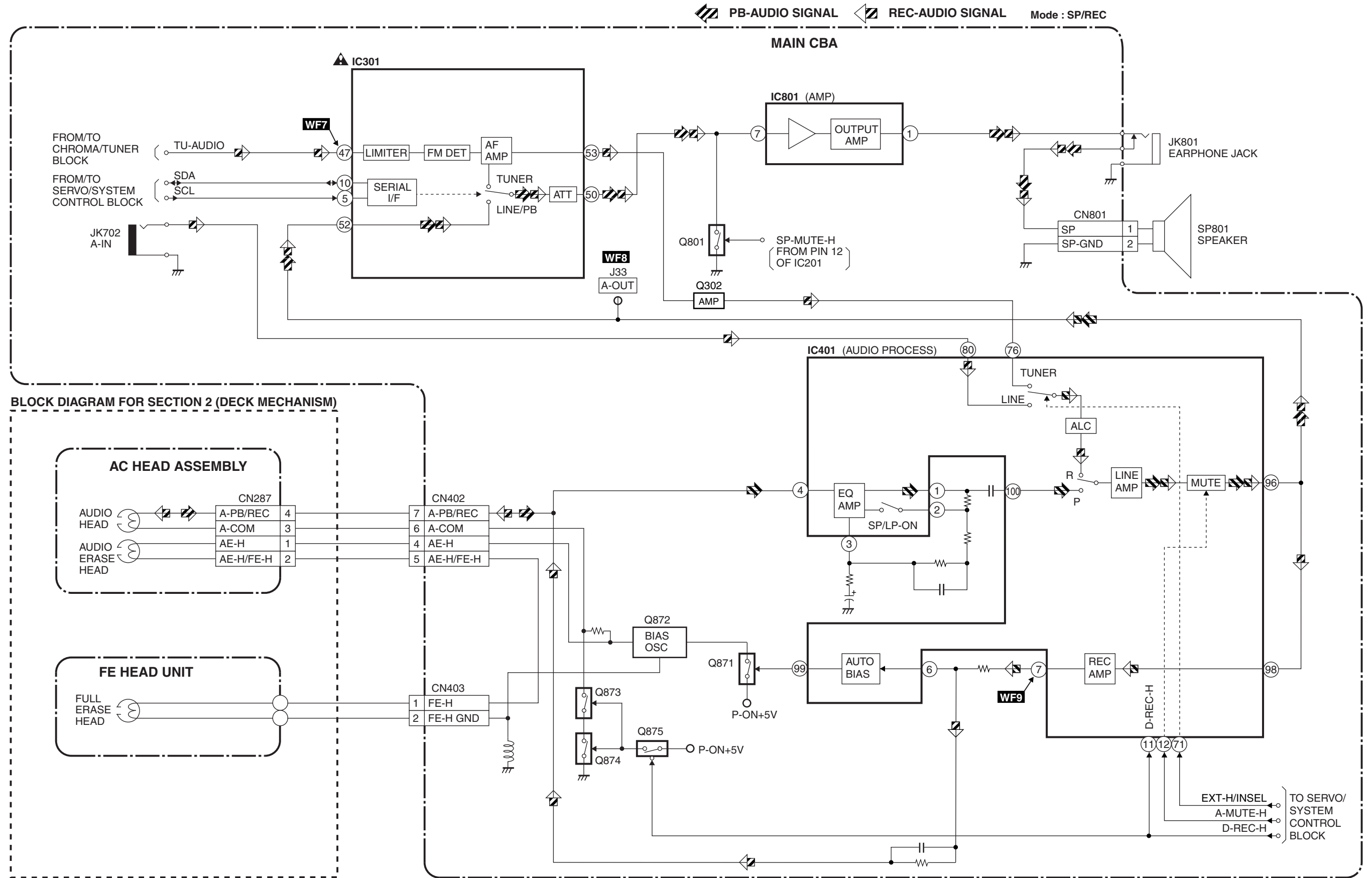


Video Block Diagram

REC VIDEO SIGNAL PB VIDEO SIGNAL MODE: SP/REC

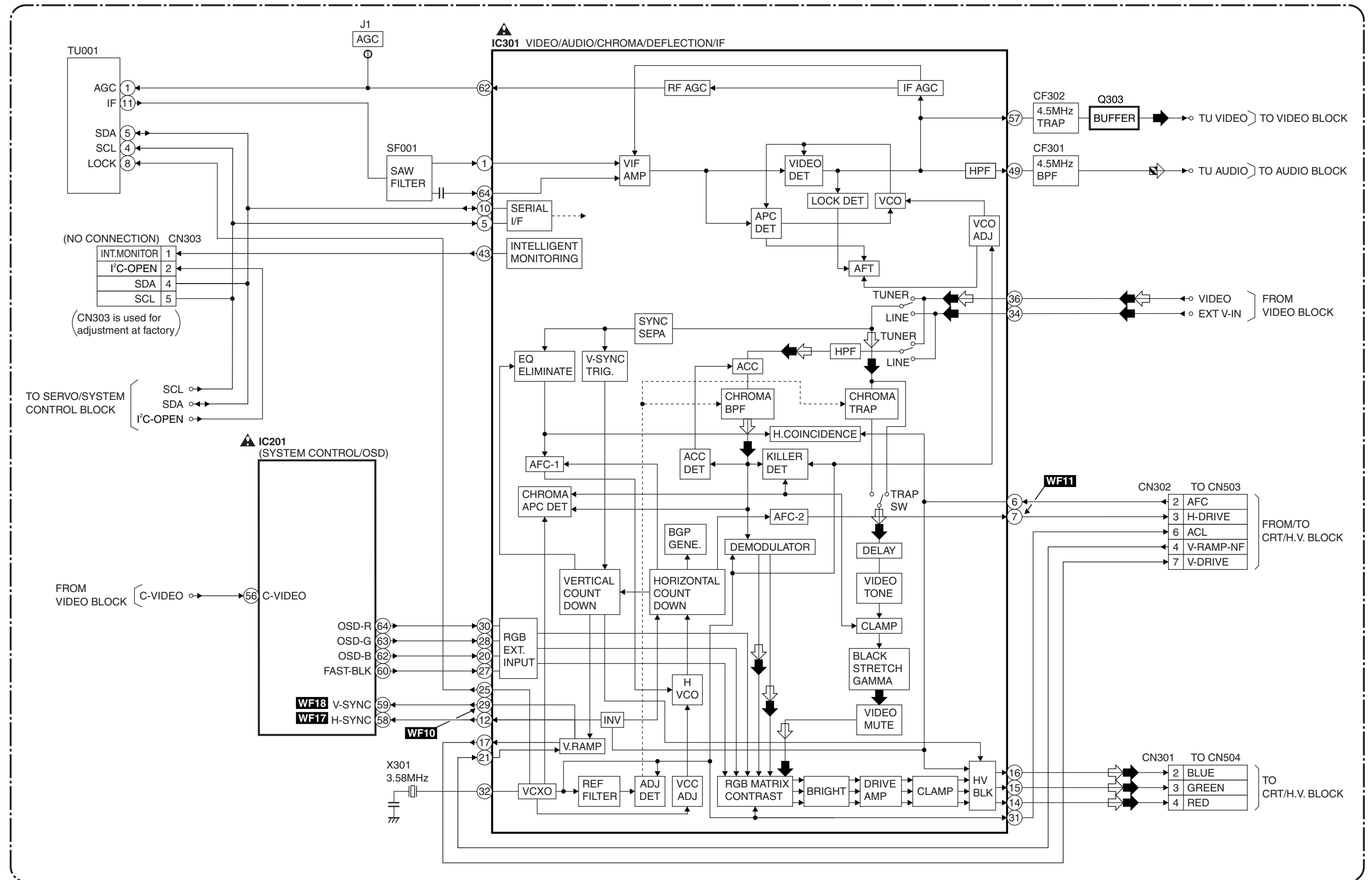


Audio Block Diagram

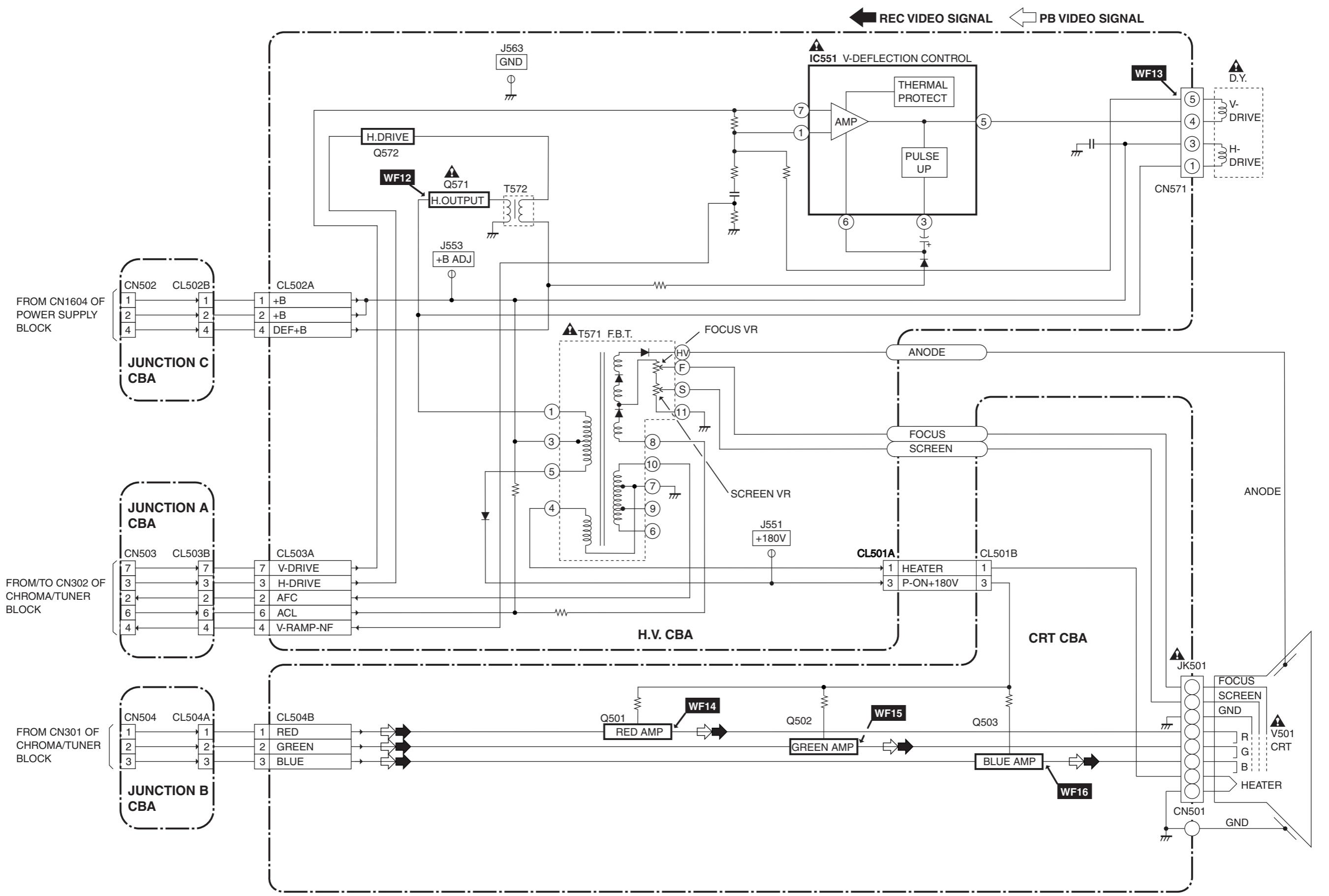


Chroma/Tuner Block Diagram

REC-AUDIO SIGNAL
 PB-AUDIO SIGNAL
 REC VIDEO SIGNAL
 PB VIDEO SIGNAL
 Mode : SP/REC



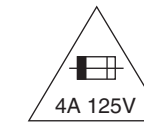
CRT/H.V. Block Diagram



Power Supply Block Diagram

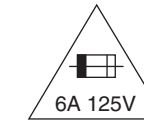
Fixed voltage power supply circuit is used in this unit.
 If Main Fuse (F1601, F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC(DC) plug to the AC(DC) power supply.
 Otherwise it may cause some components in the power supply circuit to fail.

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



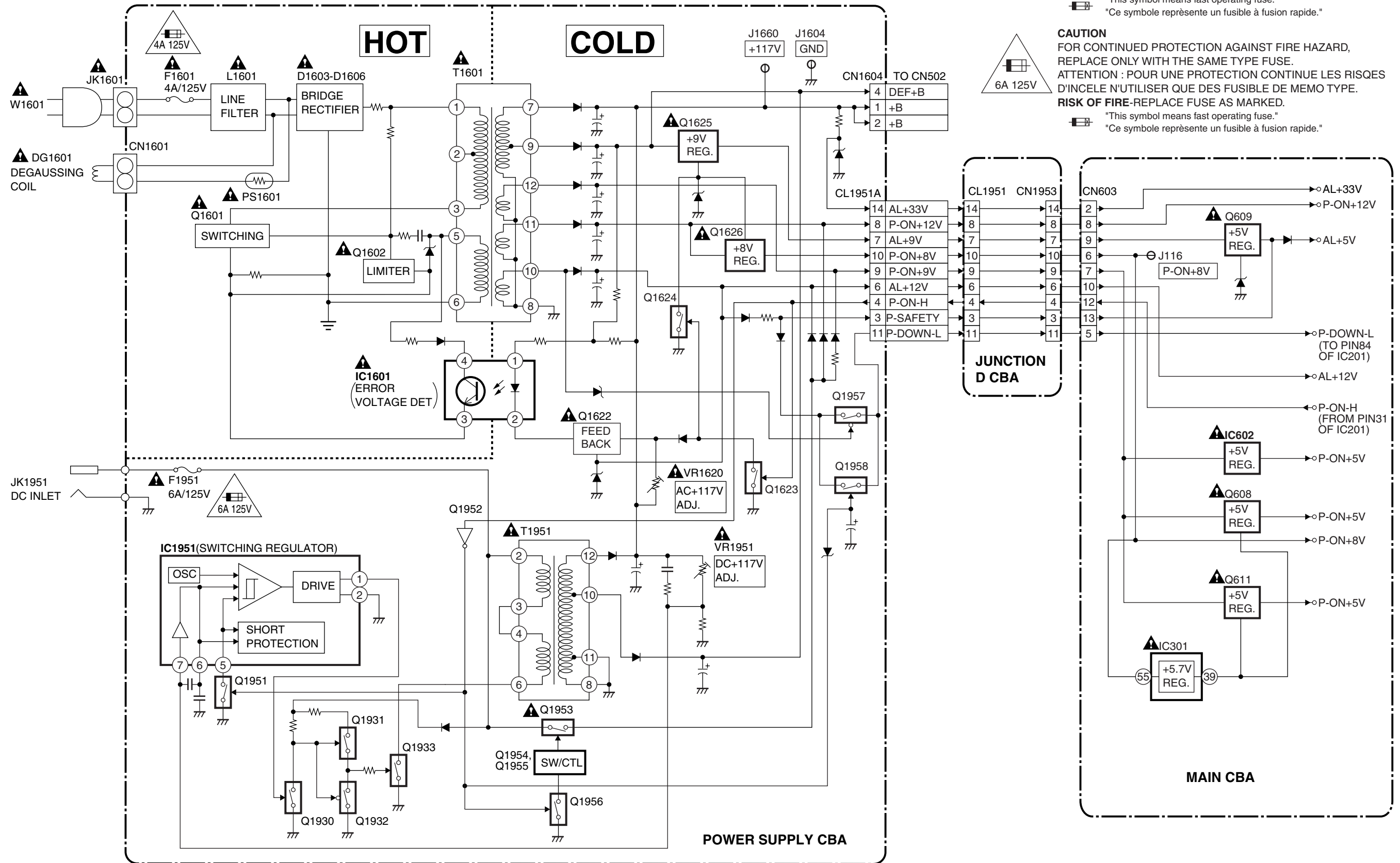
CAUTION
 FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
 REPLACE ONLY WITH THE SAME TYPE FUSE.
 ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
 D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

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



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

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



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

EJECT R

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. (Shall not unload)

(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. (Shall not unload)

(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 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 5 sec. at SP, 10 sec. at LP, 14 sec. at SLP, 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 STEP (B) Mode.

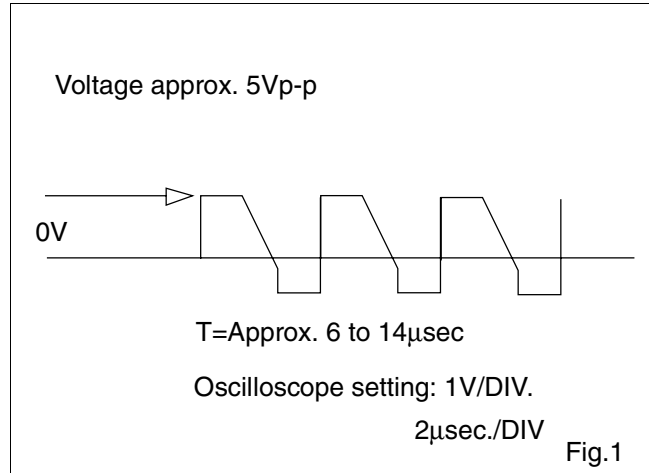
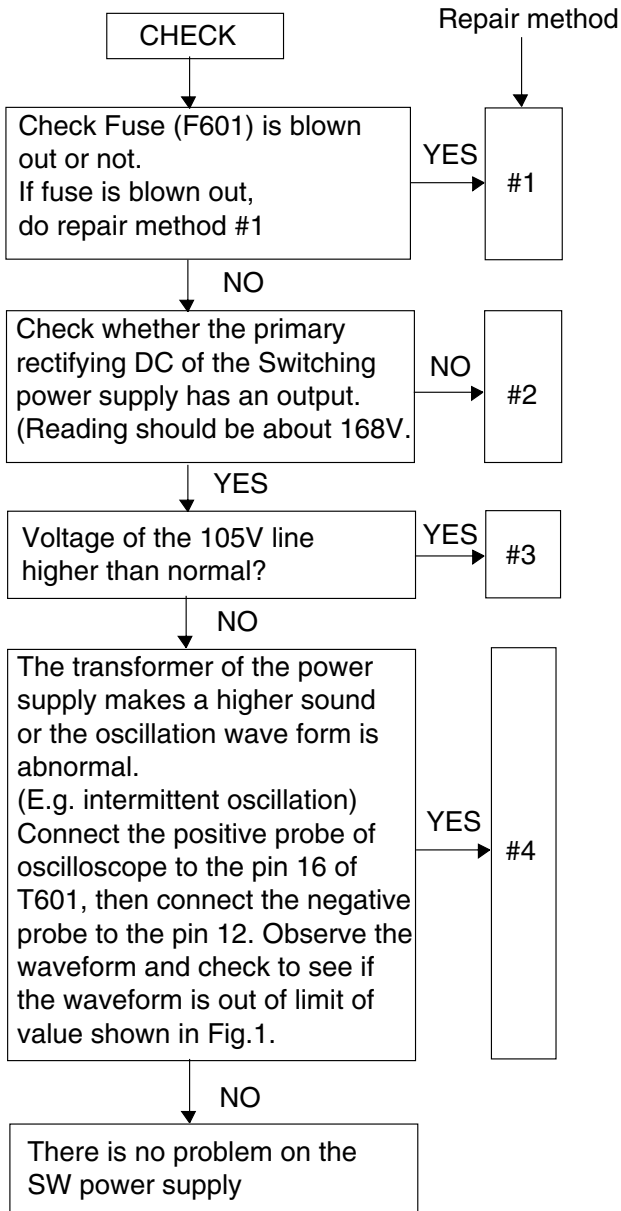
- 3) Countermeasure for TAPE LOADING Malfunction
Detect the Malfunction with the LOADING Switch.
- a) TAPE LOADING Malfunction
If LD-SW does not go to the established position after a lapse of 7 sec. or more from TAPE LOADING or TAPE UNLOADING start, the LOADING function shall immediately be stopped 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)

Power Supply Trouble Shooting Guide

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



Repair method #1

(Power must be off)

Short circuit in the secondary side. check diode D613, D614, D616, D617 and D618, switching transistor (Q601), control transistor (Q602), diode and resistor replace as necessary.

Disconnect 105V diode (D613), 25V diode (D614), 8V diode (D616), 12V diode (D617, 12V diode (D618) and Check the load continuity of 105V line, 25V line, 8V line, 12V line through a tester (resistance range).

If the tester indicates a lower resistance value around 0 ohm, the line is short-circuited.

Before repairing the switching power supply, find out the short-circuited area of such line and repair it.

If the tester does not indicate any low resistance value (around 0 ohm), no load is short-circuited and there is no problem.

2] Check for any defective parts while the secondary rectifying diodes are disconnected (D613, D614, D616, D617 and D618) perform a diode check in both forward and reverse directions through a tester.

Repair method #2

Check the primary rectifying diodes (D603-D606) as possible problems. Remove the above mentioned parts and check them. Perform check according to the step 1 and 2 of repair method #1 and check for defects following parts, then if necessary replace with factory originals..

R602 is open or not.

Q601, Q602, D607, D608 and D611 are short or not.

Repair method #3

The feedback circuit which is monitored by the output of D613 105V may not work and this may be regarded as a possible cause, remove IC601 (Photo Coupler), diode (D620) and transistor (Q604) check for defects.

Repair method #4

Check control circuitly which is connecting to Pin 2 and 1 of Switching Transformer T601.

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.

Note:

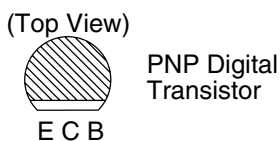
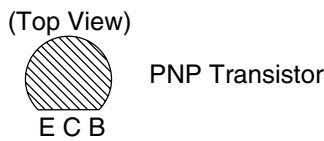
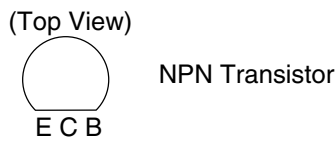
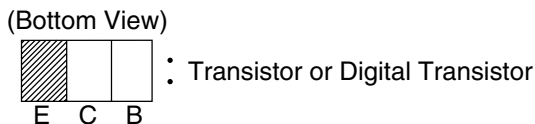
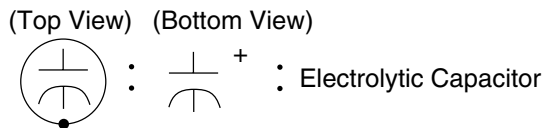
1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W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

Capacitor Temperature Markings

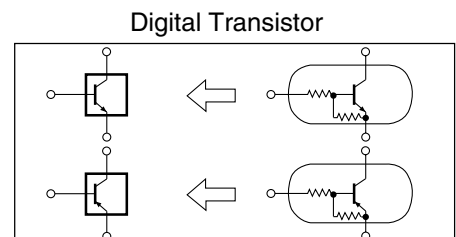
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	$\pm 10\%$	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	$\pm 15\%$	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

CBA Symbols



Schematic Diagram Symbols



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

1. CAUTION:

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

2. CAUTION:

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

3. Note:

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

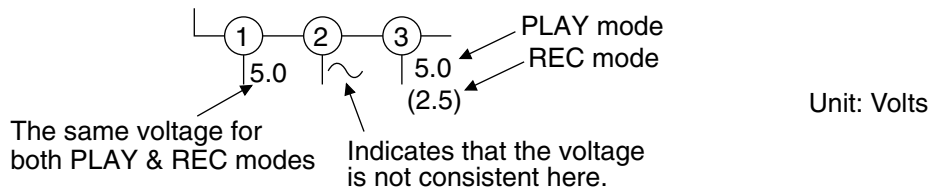
4. Wire Connectors

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

5. Note: Mark "•" is a leadless (chip) component.

6. Mode: SP/REC

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

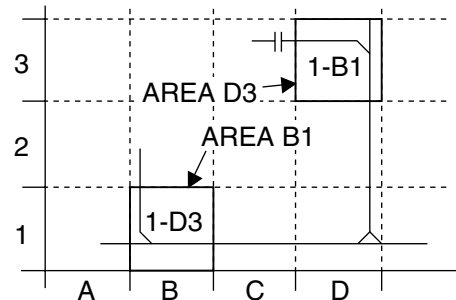


8. How to read converged lines

1-D3
 ↑ Distinction Area
 ↑ Line Number
 (1 to 3 digits)

Examples:

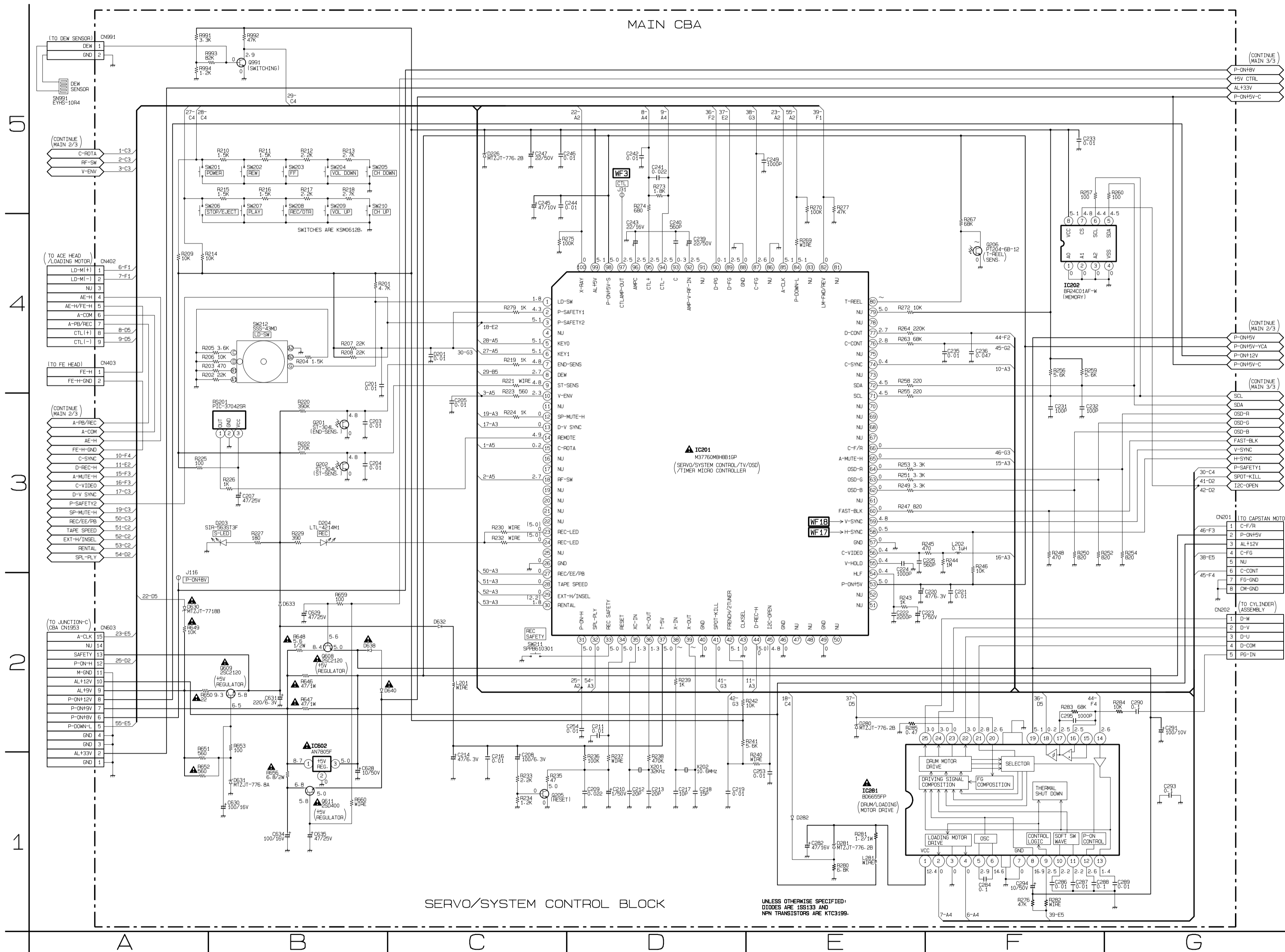
- 1. "1-D3" means that line number "1" goes to area "D3".
- 2. "1-B1" means that line number "1" goes to area "B1".



9. Test Point Information

- ⊕ : Indicates a test point with a jumper wire across a hole in the PCB.
- : Used to indicate a test point with a component lead on foil side.
- ⊘ : Used to indicate a test point with no test pin.
- : Used to indicate a test point with a test pin.

Main 1/3 Schematic Diagram



MAIN 1/3

Ref No.	Position
ICS	
IC201	D-3
IC202	F-4
IC281	E-1
IC602	B-2
TRANSISTORS	
Q201	B-3
Q202	B-3
Q205	C-1
Q206	F-4
Q608	B-2
Q609	B-2
Q611	B-1
Q991	B-5
TEST POINTS	
J31	D-5
J116	A-2
CONNECTORS	
CN201	G-3
CN202	G-2
CN402	A-4
CN403	A-4
CN603	A-2
CN991	A-5

A5	B5	C5	D5	E5	F5	G5
A4	B4	C4	D4	E4	F4	G4
A3	B3	C3	D3	E3	F3	G3
A2	B2	C2	D2	E2	F2	G2
A1	B1	C1	D1	E1	F1	G1

← Audio(REC)

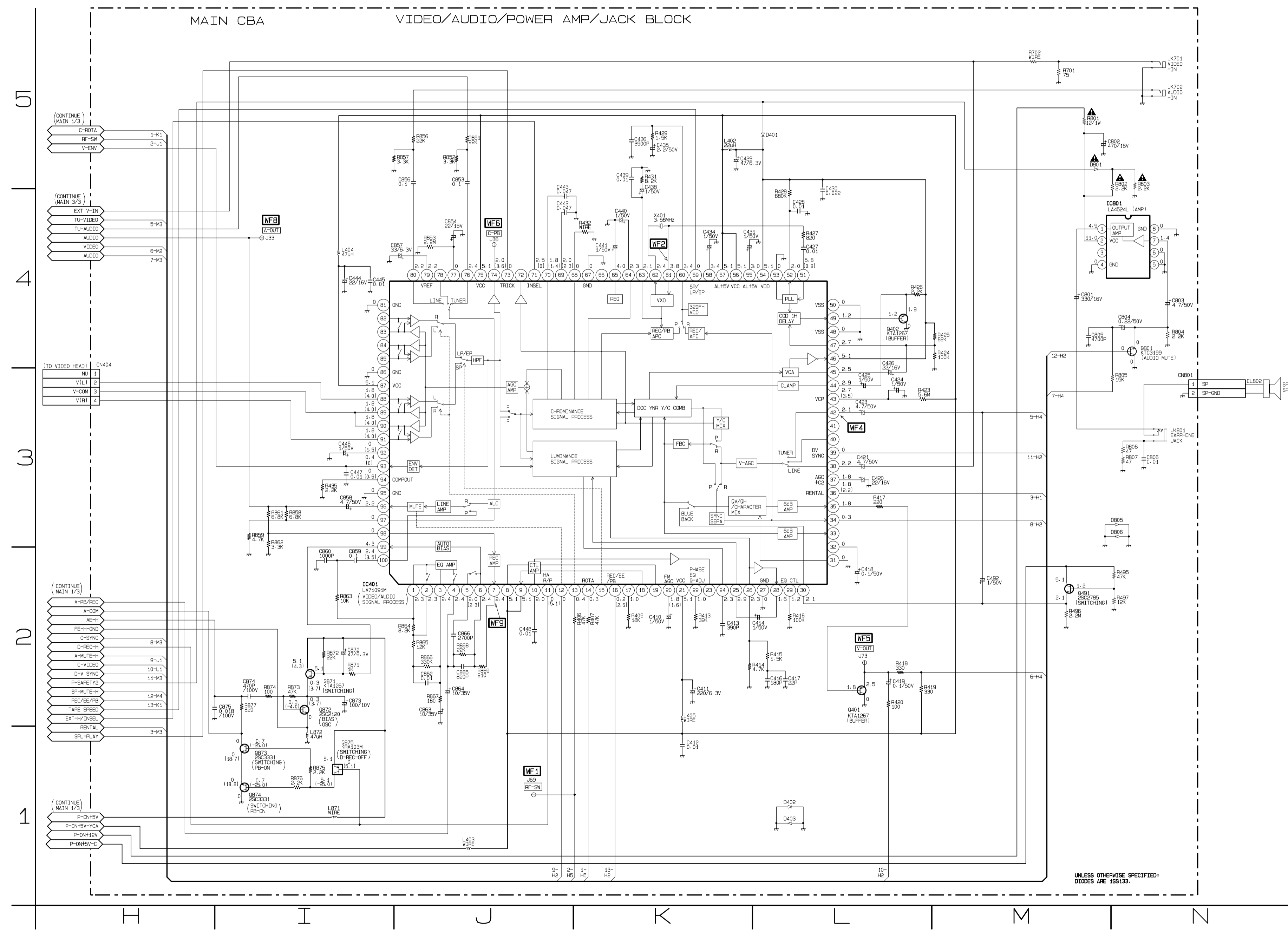
←

→

◀ Audio(PLAY)



Main 2/3 Schematic Diagram

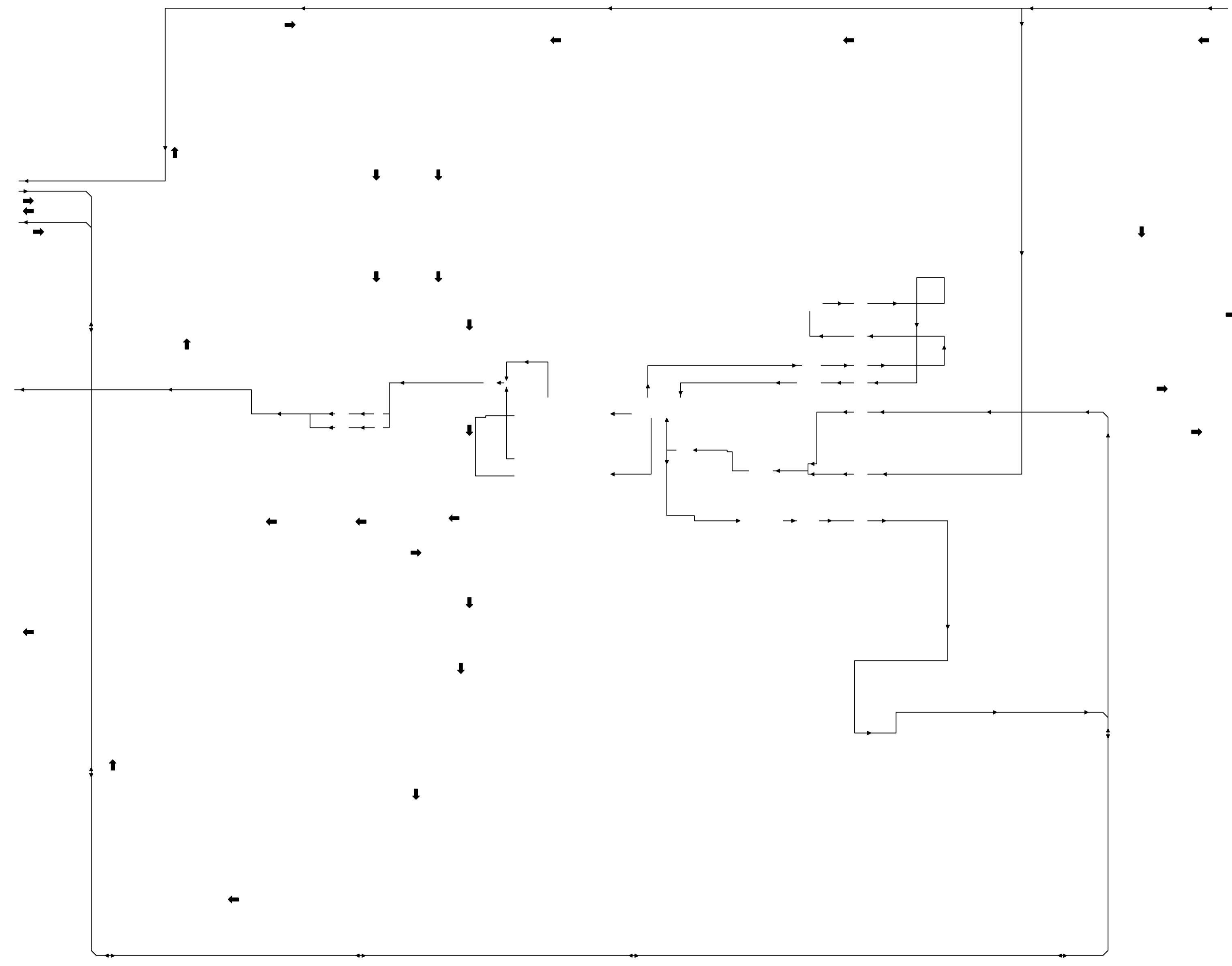


MAIN 2/3	
Ref No.	Position
ICS	
IC401	I-2
IC801	M-4
TRANSISTORS	
Q401	L-2
Q402	L-4
Q491	M-2
Q801	N-4
Q871	I-2
Q872	I-2
Q873	I-1
Q874	I-1
Q875	I-1
TEST POINTS	
J33	J-4
J36	J-4
J69	J-1
J73	L-2
CONNECTORS	
CN404	H-4
CN801	N-3

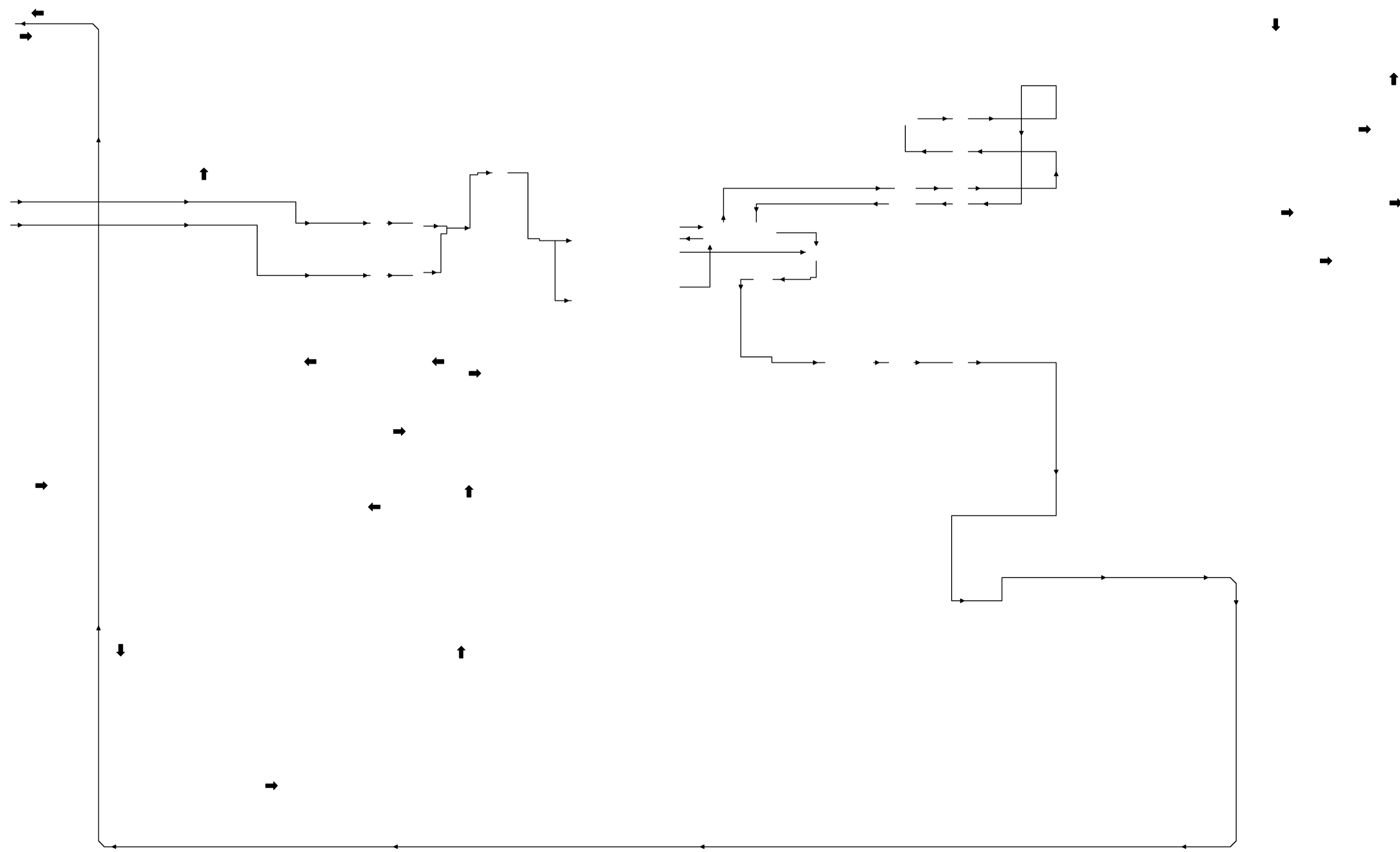
UNLESS OTHERWISE SPECIFIED
DIODES ARE 1SS133

H5	I5	J5	K5	L5	M5	N5
H4	I4	J4	K4	L4	M4	N4
H3	I3	J3	K3	L3	M3	N3
H2	I2	J2	K2	L2	M2	N2
H1	I1	J1	K1	L1	M1	N1

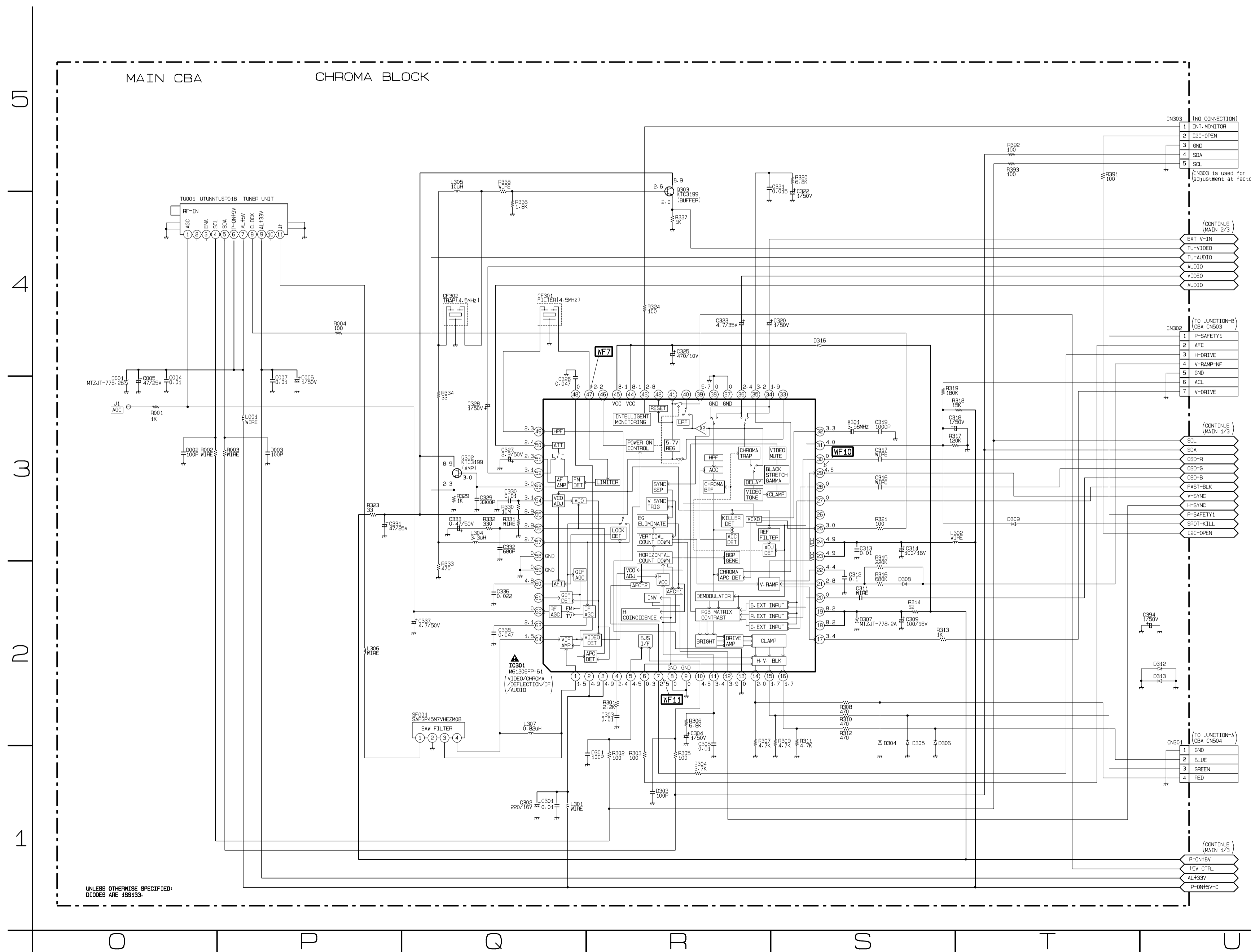
— REC Video Signal
◄ REC Audio Signal



———— PB Video Signal
◀ PB Audio Signal



Main 3/3 Schematic Diagram

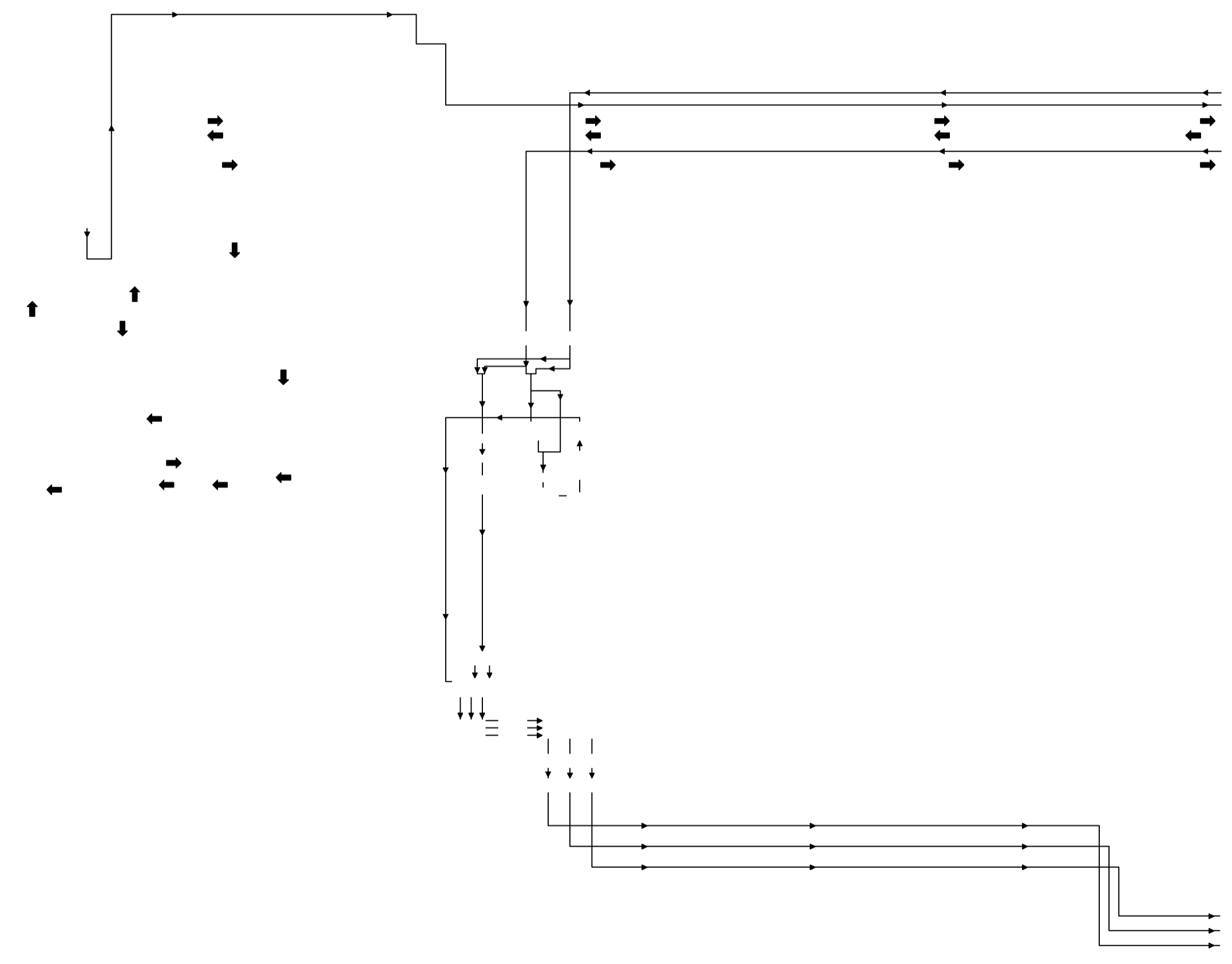


MAIN3/3	
Ref No.	Position
IC301	Q-2
TRANSISTORS	
Q302	Q-3
Q303	R-5
TEST POINTS	
J1	O-3
CONNECTORS	
CN301	U-2
CN302	U-4
CN303	U-5

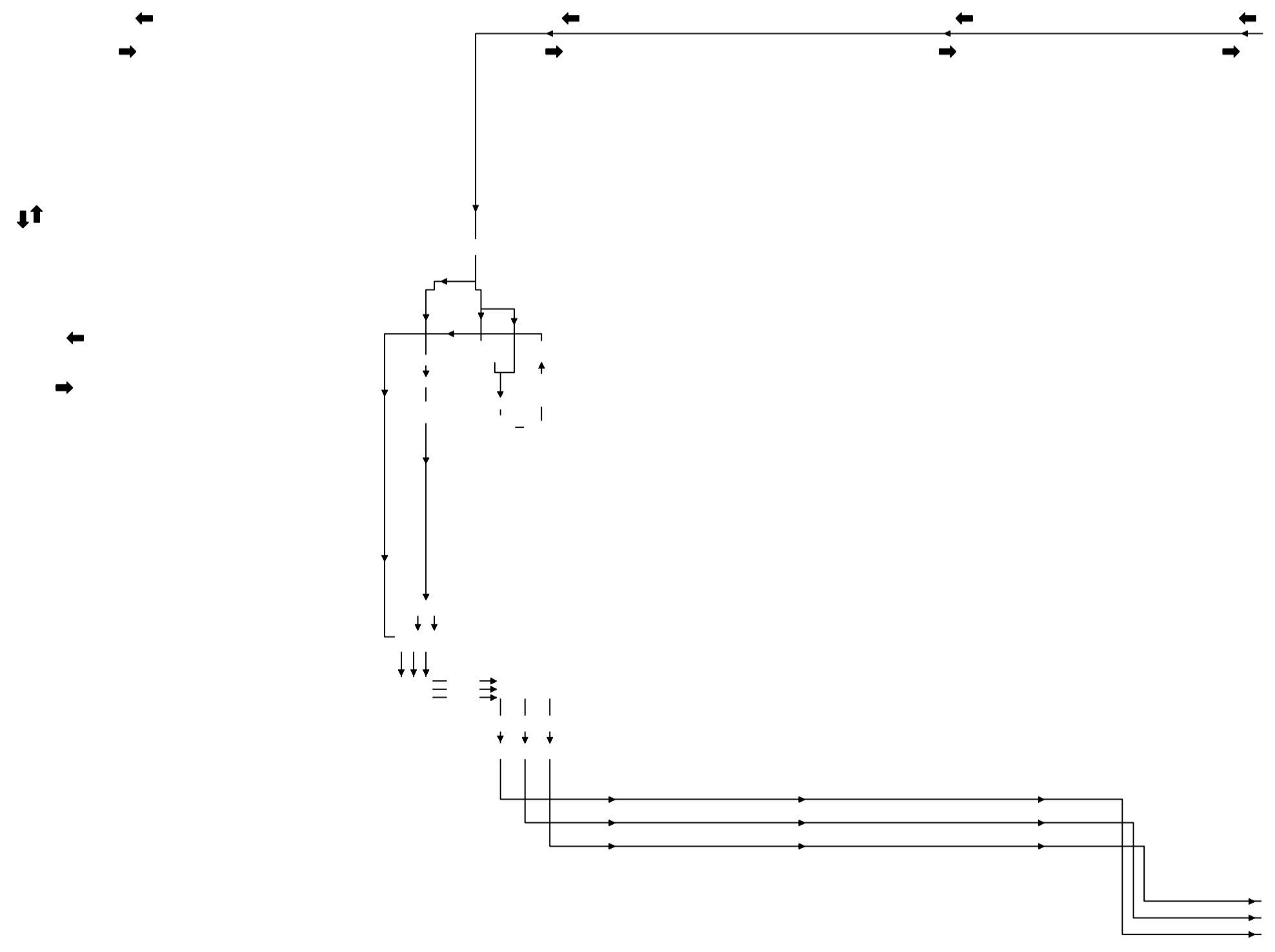
UNLESS OTHERWISE SPECIFIED:
DIODES ARE 1SS133.

O5	P5	Q5	R5	S5	T5	U5
O4	P4	Q4	R4	S4	T4	U4
O3	P3	Q3	R3	S3	T3	U3
O2	P2	Q2	R2	S2	T2	U2
O1	P1	Q1	R1	S1	T1	U1

— REC Video Signal
◄ REC Audio Signal



———— PB Video Signal
◀ PB Audio Signal



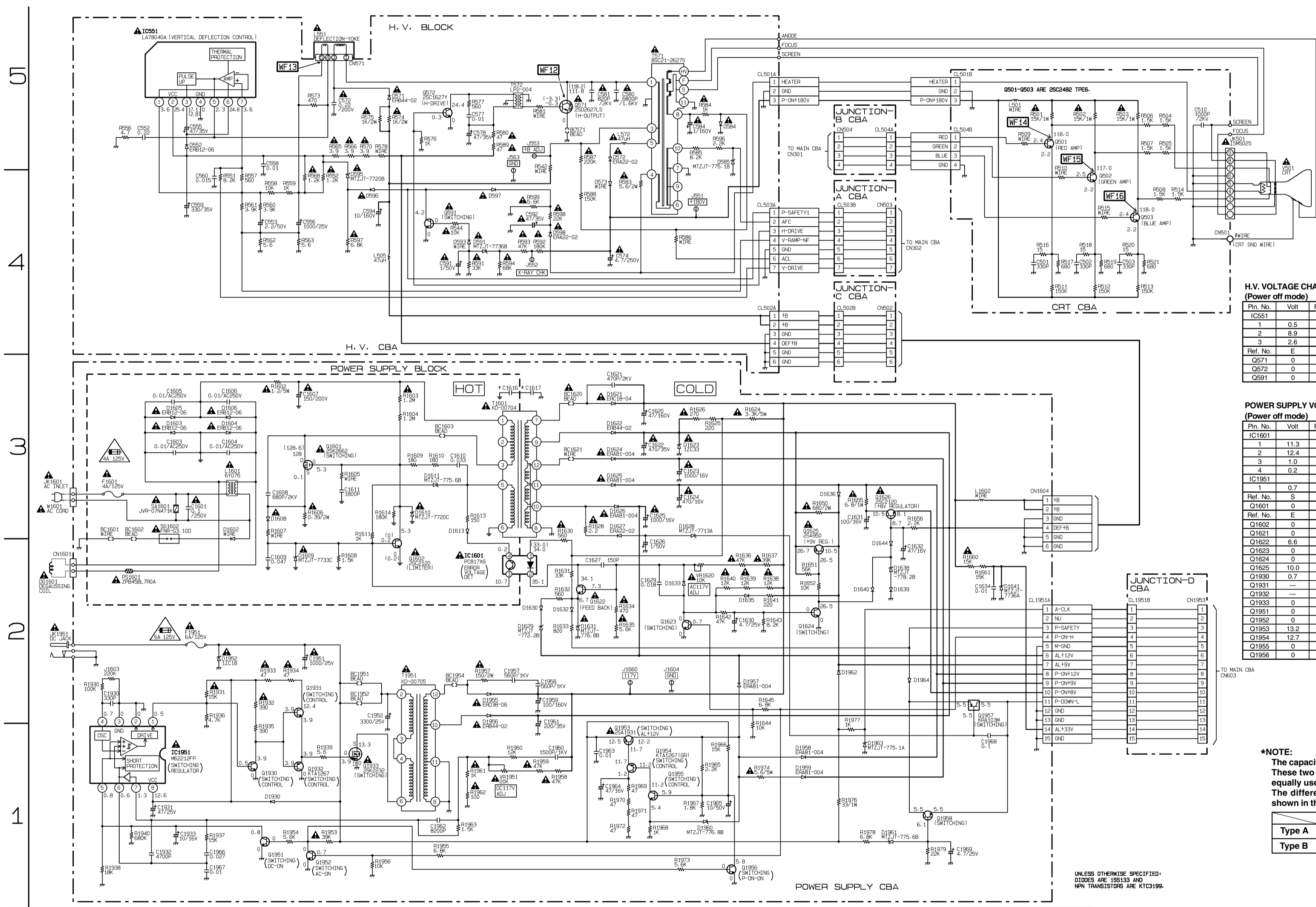
Power Supply/H.V./CRT Schematic Diagram

NOTE:
THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING
HOT GND AS A COMMON TERMINAL.

CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F1601, F1951) is blown, check to see that all components in the power supply
circuit are not defective before you connect the AC(DC) plug to the AC(DC) 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.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
This symbol means fast operating fuse.
Ce symbole représente un fusible à fusion rapide.

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



H.V.	
Ref No.	Position
ICS	
IC551	A-5
TRANSISTORS	
Q571	C-5
Q572	C-5
Q591	C-4
TEST POINTS	
J551	D-4
J552	C-4
J553	C-5
J563	C-5
CONNECTORS	
CL501A	D-5
CL502A	D-4
CL503A	D-4
CN571	B-5

CRT	
Ref No.	Position
TRANSISTORS	
Q501	F-5
Q502	F-4
Q503	G-4
CONNECTORS	
CN501	G-4
CL501B	F-5
CL504B	F-5

H.V. VOLTAGE CHART
(Power off mode)

Pin. No.	Volt	Pin. No.	Volt
1	0.5	5	0.6
2	8.9	6	9.6
3	2.6	7	0.5
Ref. No.	E	C	B
Q571	0	46.5	0
Q572	0	9.9	0
Q591	0	1.0	0

POWER SUPPLY

Ref No.	Position
ICS	
IC1601	C-2
IC1951	A-1
TRANSISTORS	
Q1601	B-3
Q1602	C-2
Q1622	D-2
Q1623	D-2
Q1624	E-2
Q1625	E-3
Q1626	E-3
Q1930	B-1
Q1931	B-2
Q1932	B-1
Q1933	B-1
Q1951	B-1
Q1952	B-1
Q1953	D-1
Q1954	D-1
Q1955	D-1
Q1956	D-1
Q1957	F-2
Q1958	E-1
TEST POINTS	
J1604	D-2
J1660	D-2
Q1931	---
Q1932	---
Q1933	---
Q1951	0
Q1952	0
Q1953	0
Q1954	12.7
Q1955	0
Q1956	0
Q1957	12.0
Q1958	0
CONNECTORS	
CN1601	A-2
CN1604	F-3
CL1951A	F-2
ADJUSTMENT	
VR1620	D-2
VR1951	C-1

POWER SUPPLY VOLTAGE CHART
(Power off mode)

Pin. No.	Volt	Pin. No.	Volt
1	11.3	3	0.6
2	12.4	4	0.9
3	1.0	5	0
4	0.2	6	2.3
IC1951	7	0.1	---
1	0.7	8	13
Ref. No.	S	D	G
Q1601	0	132.7	2.0
Q1930	0.7	0.1	0.7
Q1602	0	2.0	0.2
Q1621	0	0.5	-3.7
Q1622	6.6	0	7.3
Q1623	0	7.9	0
Q1624	0	0.1	0.7
Q1625	10.0	9.8	9.2
Q1930	0.7	0.1	0.7
Q1931	---	13.0	0.1
Q1932	---	0	0.1
Q1933	0	13.7	---
Q1951	0	0	0.6
Q1952	0	1.5	0
Q1953	13.2	0	12.7
Q1954	12.7	0	11.9
Q1955	0	12.0	0
Q1956	0	0	0.6

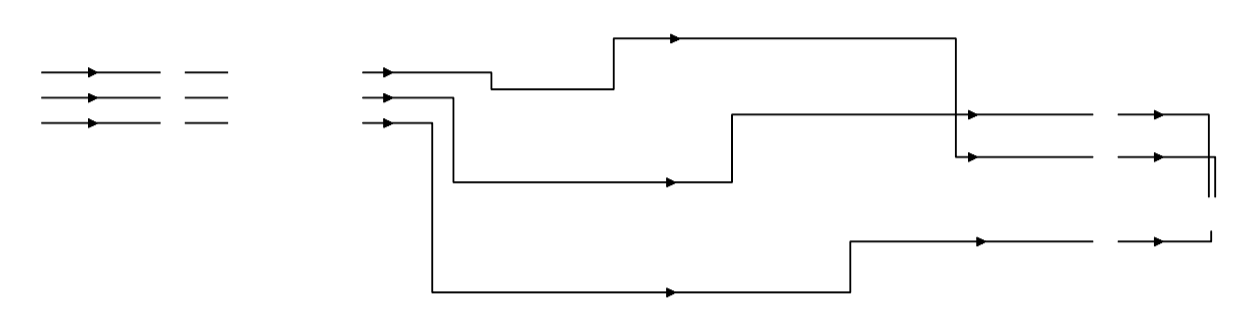
*NOTE:
The capacitor (C1616) is either type A or type B.
These two types are exchangeable and can be
equally used whichever the model is.
The difference between type A and type B is
shown in the table below.

	C1616	C1617
Type A	4700pF	WIRE
Type B	0.01µF	0.01µF

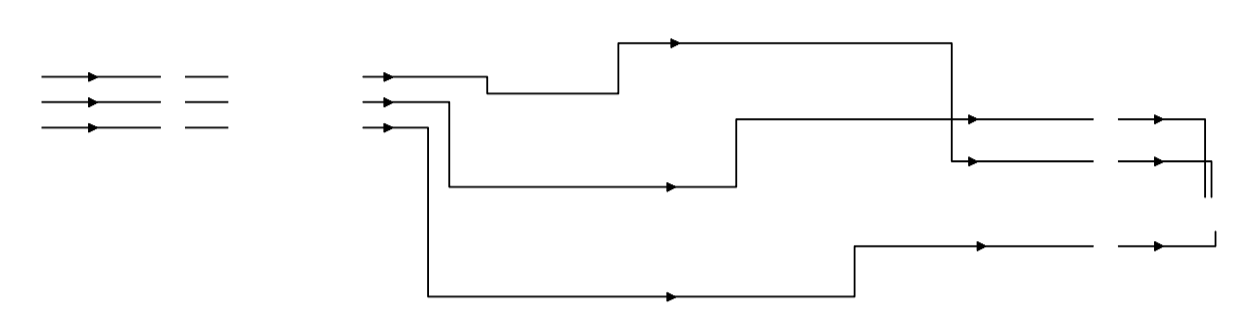
UNLESS OTHERWISE SPECIFIED
DIODES ARE 1SS133 AND
NPN TRANSISTORS ARE KTC1399.

A5	B5	C5	D5	E5	F5	G5
A4	B4	C4	D4	E4	F4	G4
A3	B3	C3	D3	E3	F3	G3
A2	B2	C2	D2	E2	F2	G2
A1	B1	C1	D1	E1	F1	G1

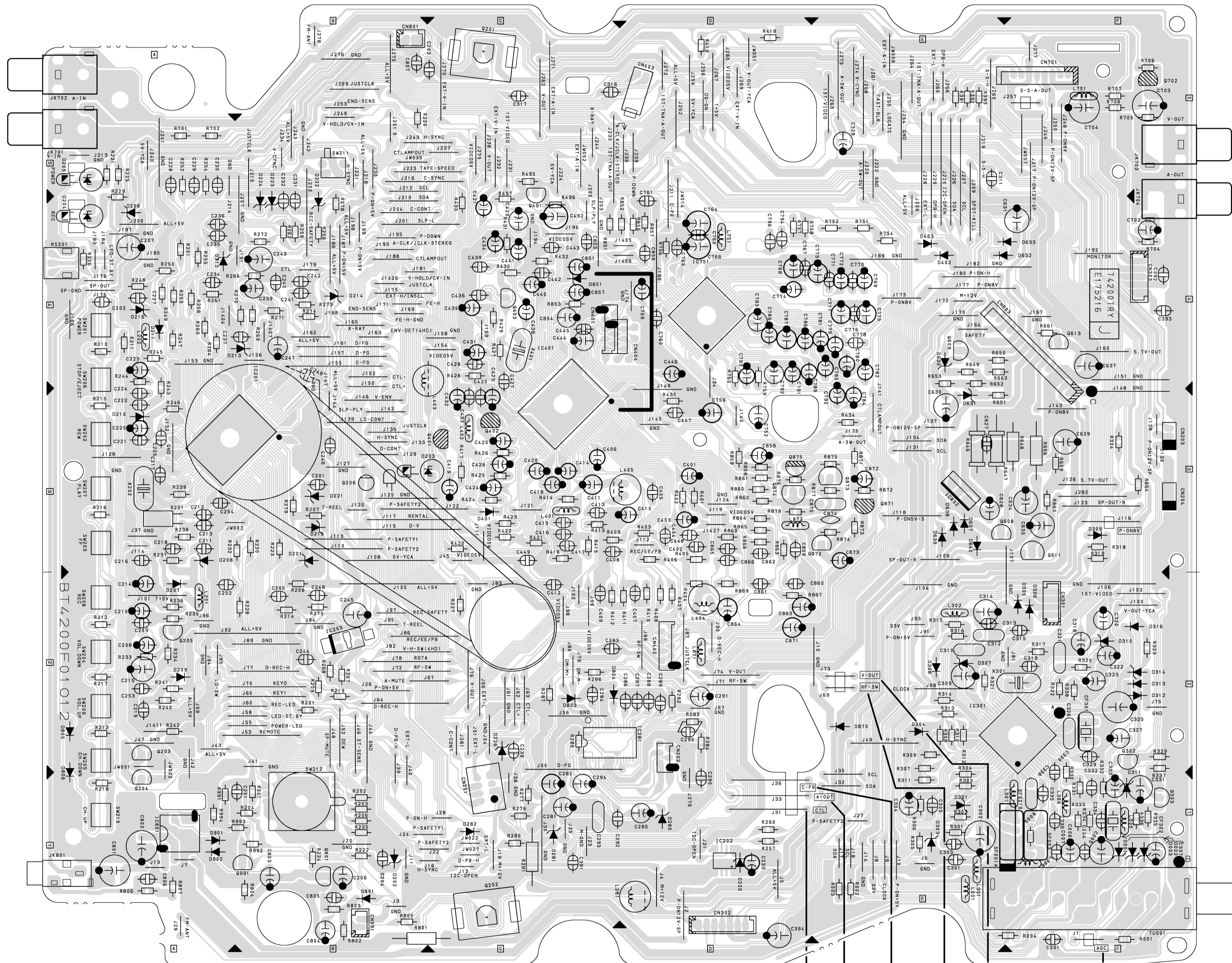
REC Video Signal



————— PB Video Signal



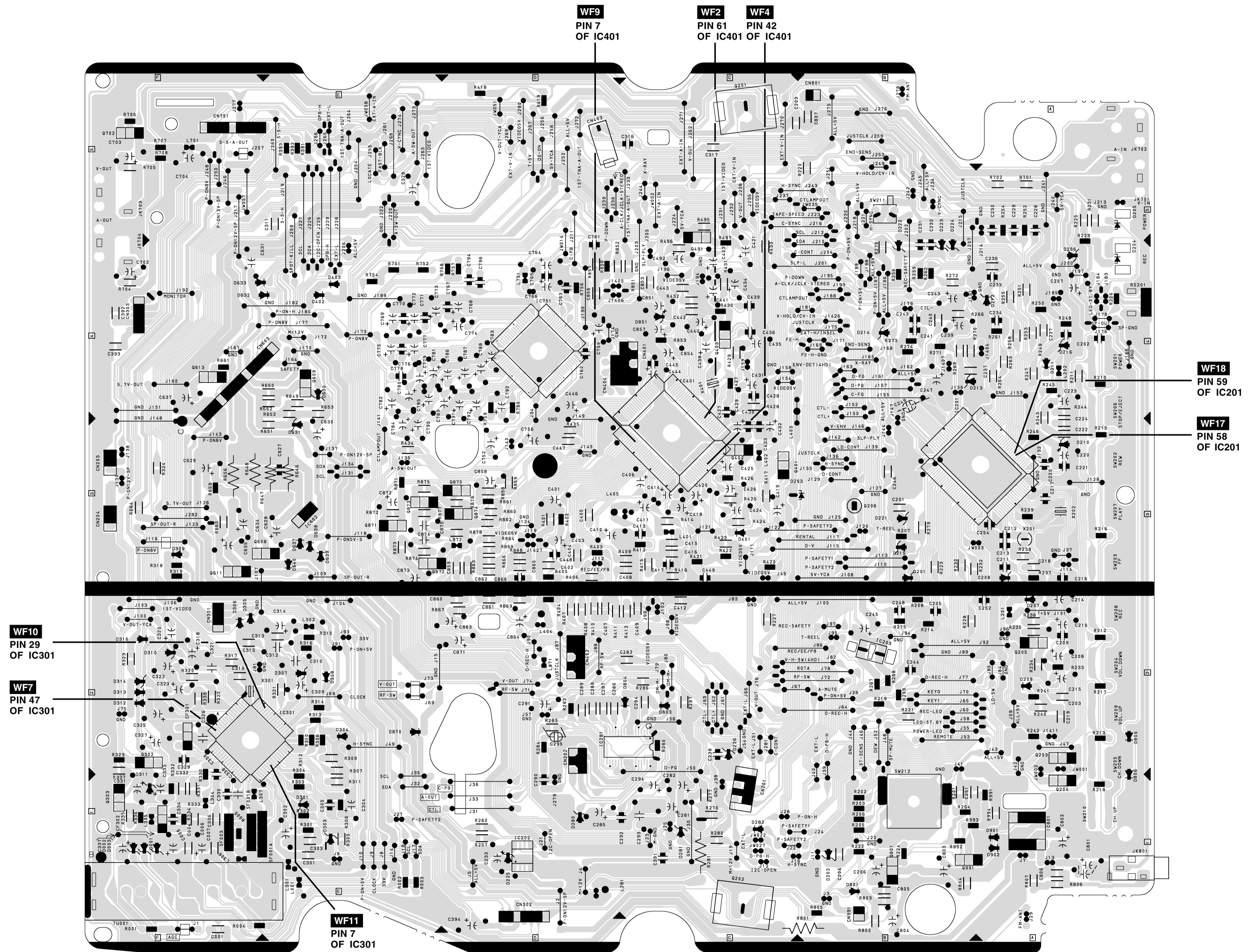
Main CBA Top View



MAIN CBA		
Ref No.	Position	ICS
IC201	B-4	
IC202	D-1	
IC281	D-2	
IC301	E-2	
IC401	C-4	
IC602	E-3	
IC801	A-1	
TRANSISTORS		
Q201	C-5	
Q202	C-1	
Q205	A-2	
Q206	B-3	
Q302	F-2	
Q303	F-1	
Q401	C-3	
Q402	C-3	
Q491	E-4	
Q608	E-3	
Q609	E-4	
Q611	F-3	
Q801	B-1	
Q871	E-3	
Q872	D-3	
Q873	E-3	
Q874	D-3	
Q875	D-3	
Q991	B-1	
TEST POINTS		
J1	F-1	
J31	D-1	
J33	D-1	
J36	D-1	
J69	E-2	
J73	E-2	
J116	F-3	
CONNECTORS		
CN201	C-1	
CN202	D-2	
CN301	F-2	
CN302	D-1	
CN303	F-4	
CN403	D-2	
CN403	D-5	
CN404	D-4	
CN603	E-4	
CN801	B-5	
CN991	B-1	

- WF3
- WF8
- WF6
- WF1
- WF5
- J31
- J33
- J36
- J69
- J73
- J1
- CTL
- A-OUT
- C-PB
- RF-SW
- V-OUT
- AGC

Main CBA Bottom View



Power Supply CBA Top View

CAUTION !

Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F1601, F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC(DC) plug to the AC(DC) 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.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

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

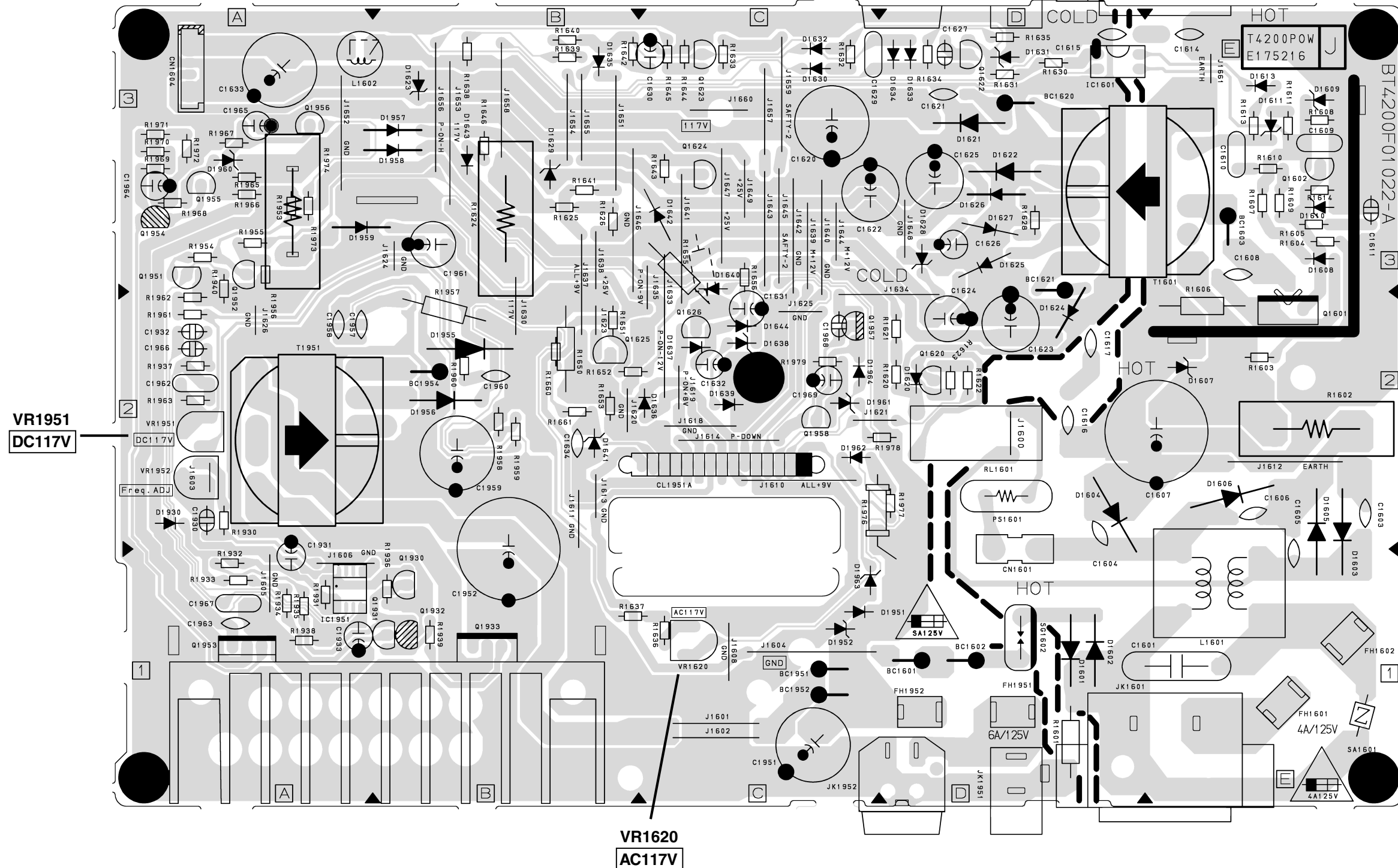


CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
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ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

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

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.**



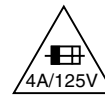
POWER SUPPLY.CBA

Ref No.	Position
ICS	
IC1601	D-3
IC1951	A-1
TRANSISTORS	
Q1601	E-2
Q1602	E-3
Q1622	D-3
Q1623	C-3
Q1624	C-3
Q1625	B-2
Q1626	C-2
Q1930	B-1
Q1931	B-1
Q1932	B-1
Q1933	B-1
Q1951	A-3
Q1952	A-3
Q1953	A-1
Q1954	A-3
Q1955	A-3
Q1956	A-3
Q1957	C-2
Q1958	C-2
TEST POINTS	
J1604	C-1
J1660	C-3
CONNECTORS	
CN1601	D-1
CN1604	A-3
CL1951A	C-2
ADJUSTMENT	
VR1620	C-1
VR1951	A-2

Power Supply CBA Bottom View

CAUTION !

Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F1601, F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC(DC) plug to the AC(DC) power supply.
Otherwise it may cause some components in the power supply circuit to fail.



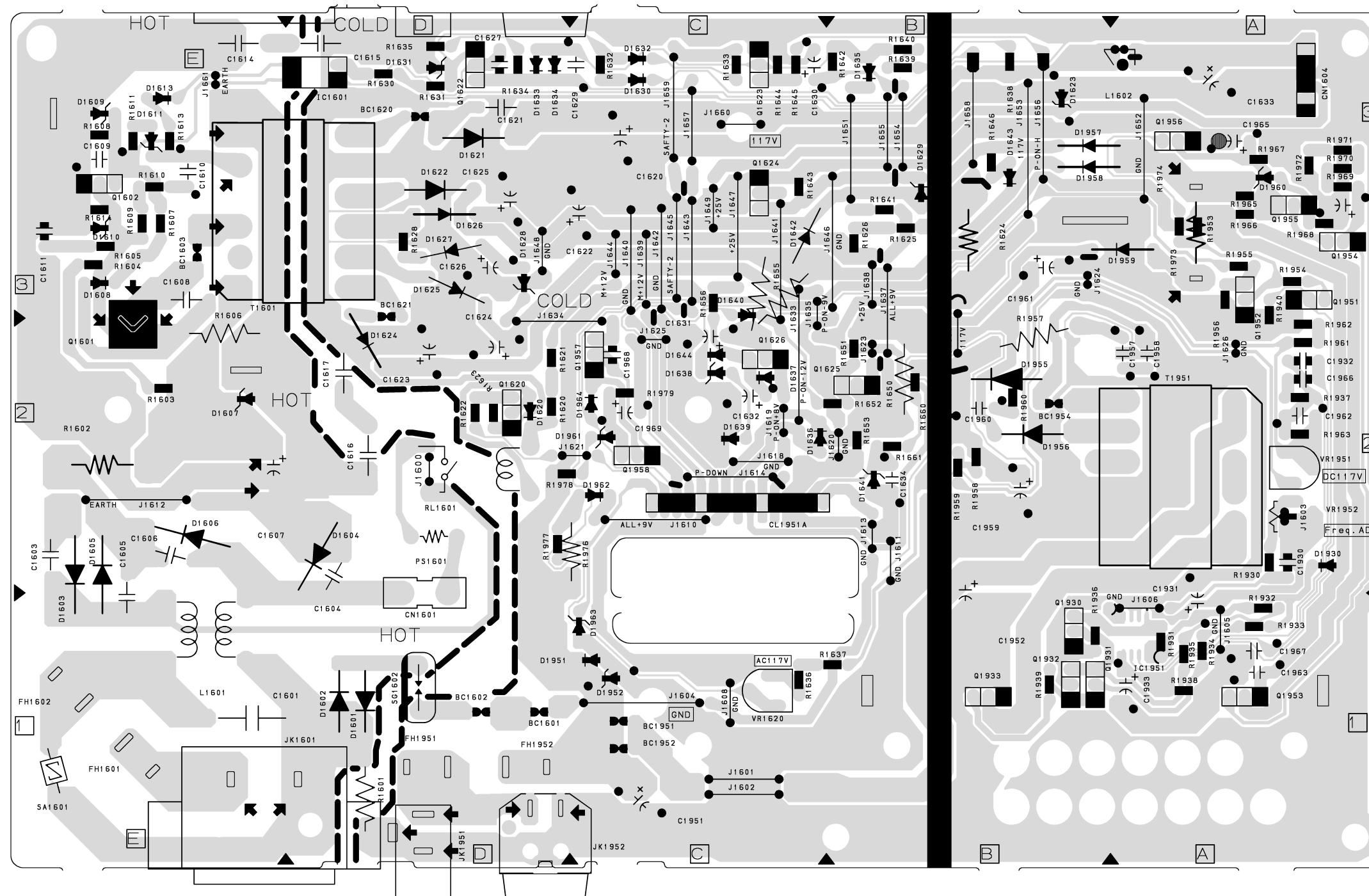
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
This symbol means fast operating fuse.
"Ce symbole représente un fusible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



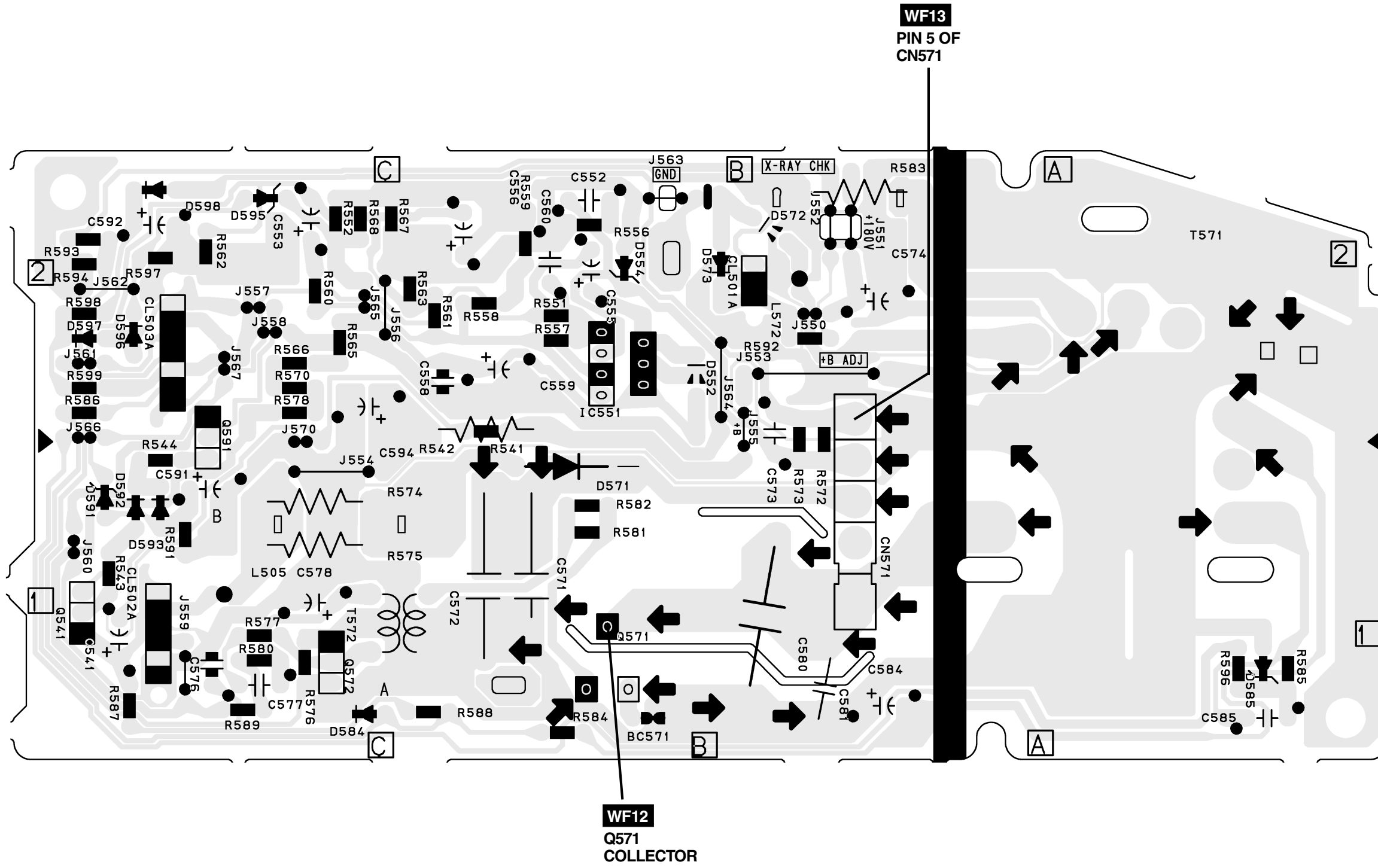
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
This symbol means fast operating fuse.
"Ce symbole représente un fusible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

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

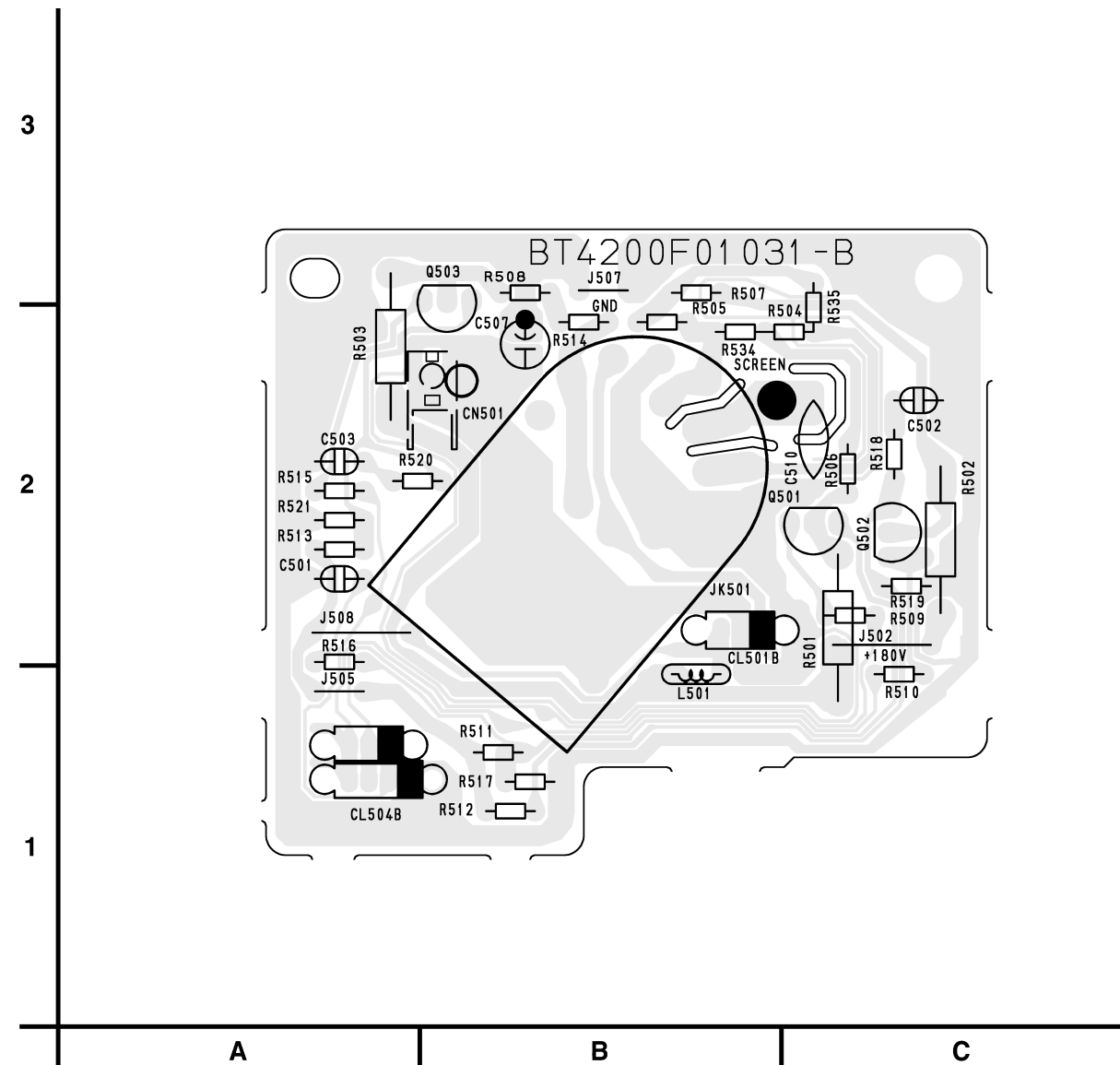
**BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER
SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED.
ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT
SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY
CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.**



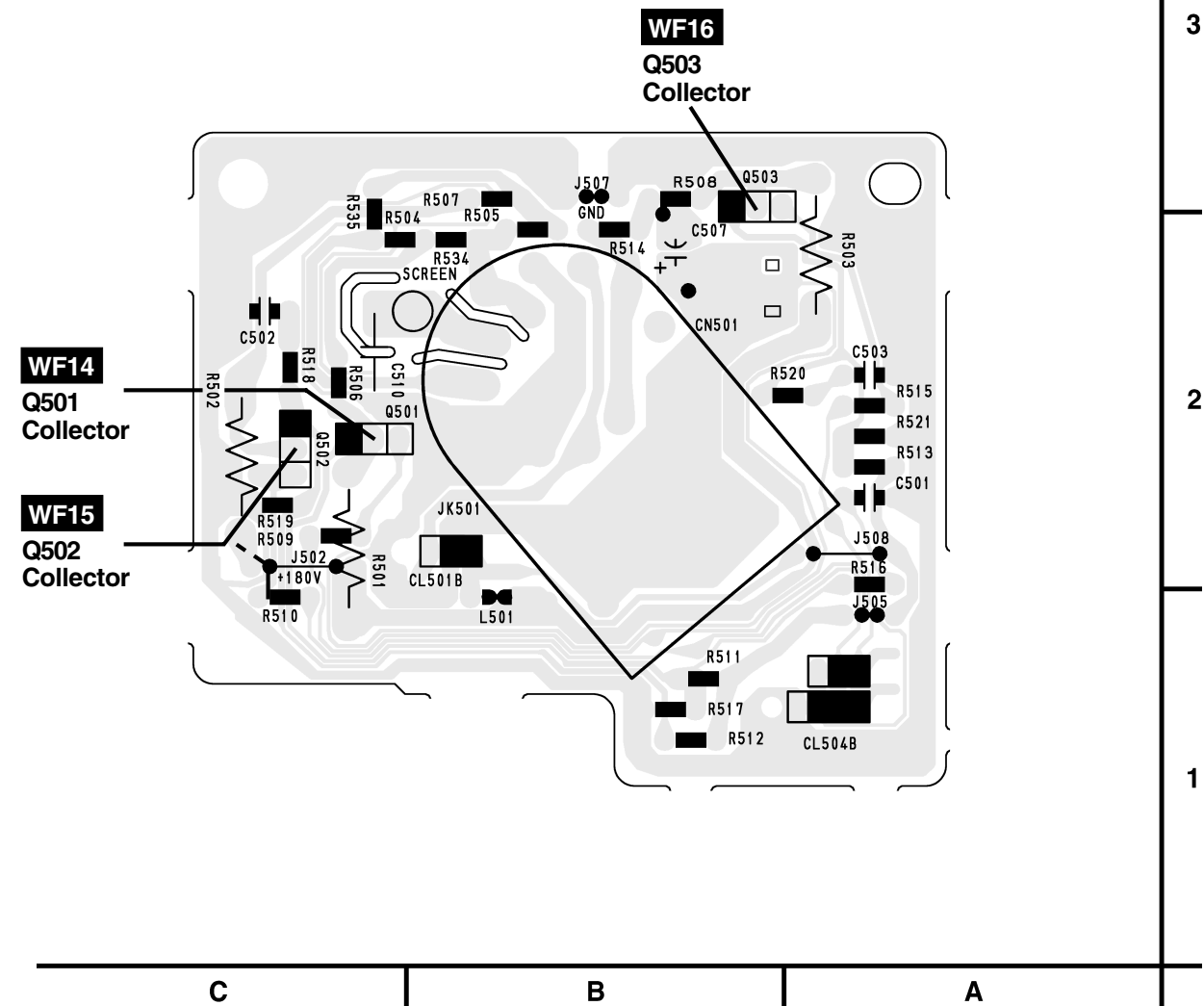
H.V. CBA Bottom View



CRT CBA Top View



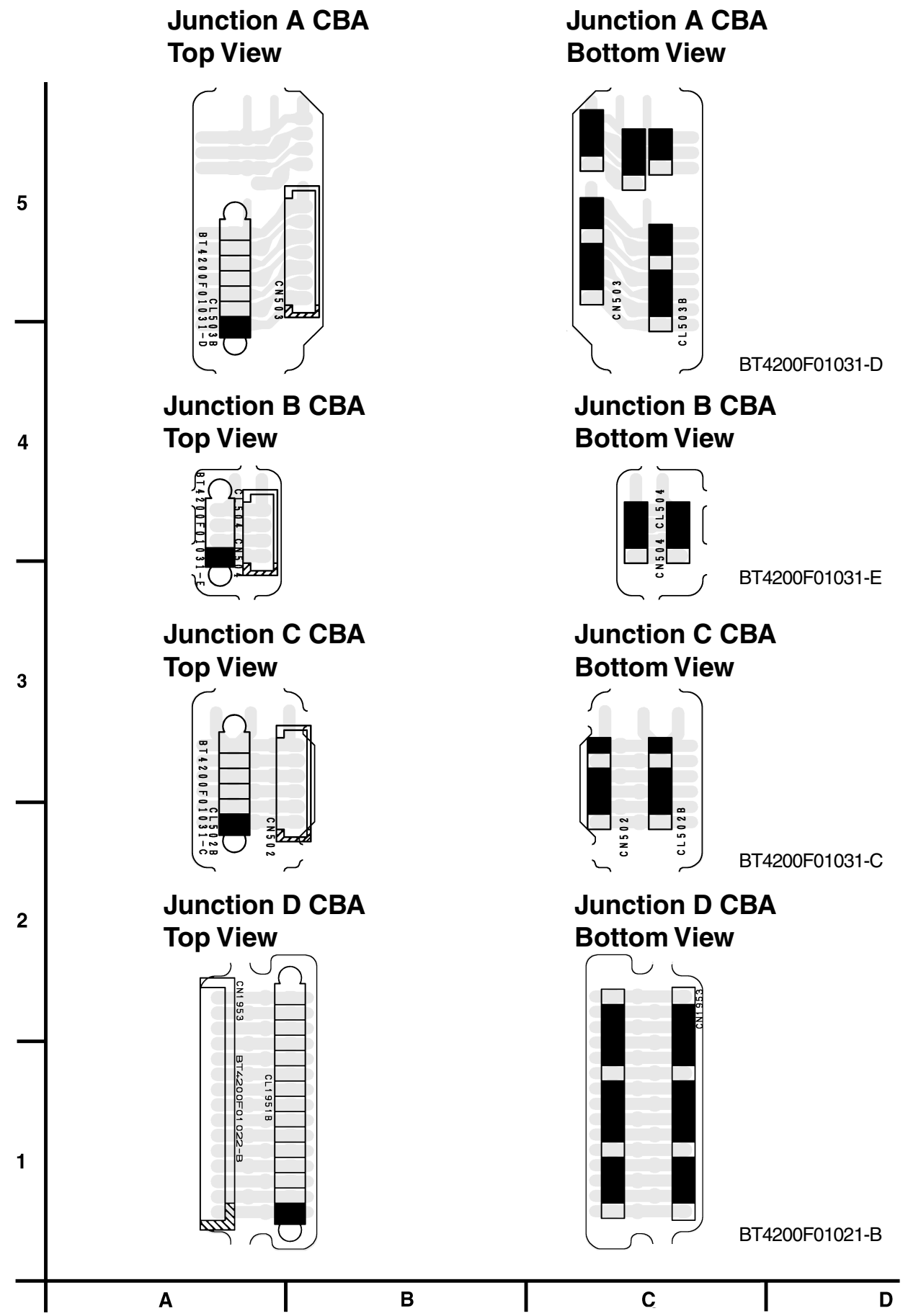
CRT CBA Bottom View



CRT.CBA

Ref No.	Position
TRANSISTORS	
Q501	B-2
Q502	C-2
Q503	B-3
CONNECTORS	
CN501	B-2
CL501B	B-2
CL504B	A-1

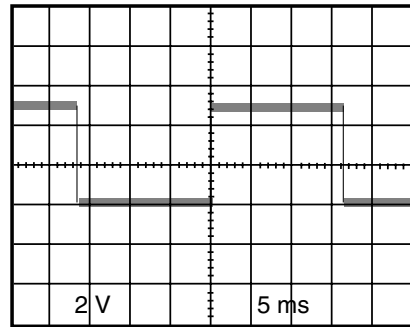
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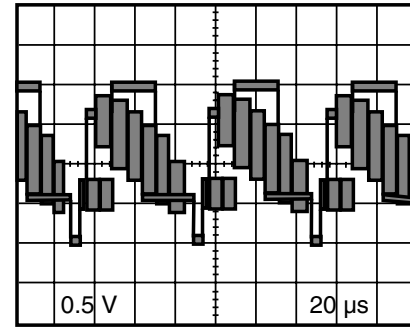
WAVEFORMS

WAVEFORM NOTES

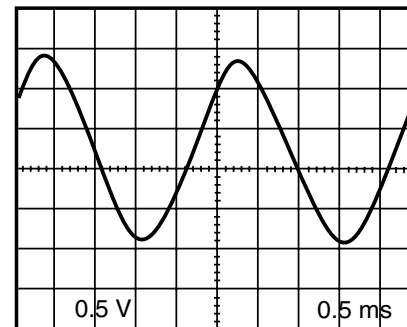
INPUT: NTSC COLOR BAR SIGNAL
 OTHER CONTROLS : CENTER POSITION
 VOLTAGES SHOWN ARE RANGE OF
 OSCILLOSCOPE SETTING



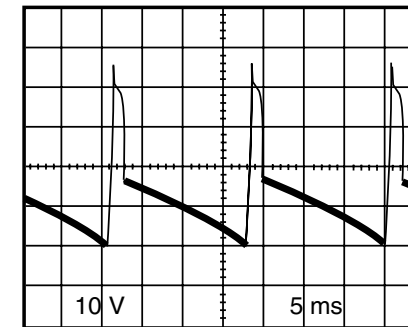
WF1 MAIN 2/3 SCHEMATIC DIAGRAM
 TP005 RF SW



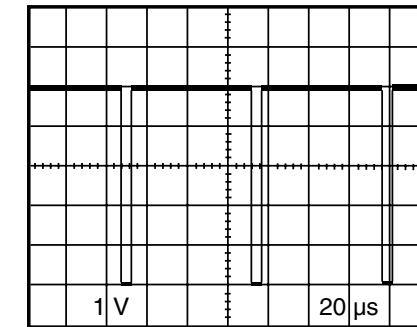
WF5 MAIN 2/3 SCHEMATIC DIAGRAM
 TP001 V-OUT



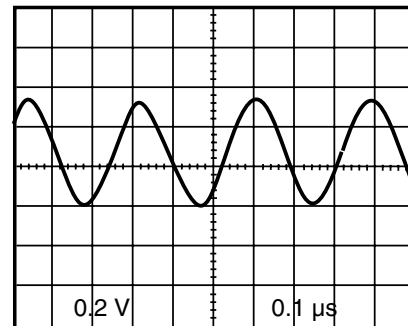
WF9 MAIN 2/3 SCHEMATIC DIAGRAM
 IC401 PIN 2



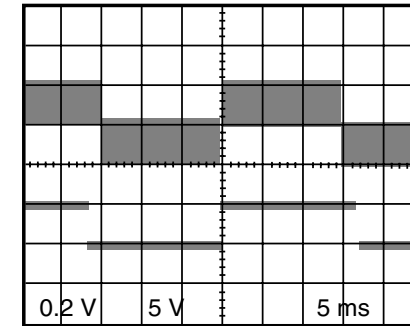
WF13 H/V SCHEMATIC DIAGRAM
 CN571 PIN 5



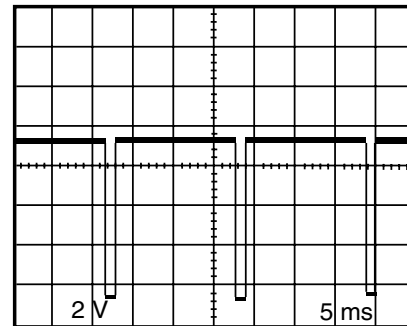
WF17 MAIN 1/3 SCHEMATIC DIAGRAM
 IC201 PIN 58



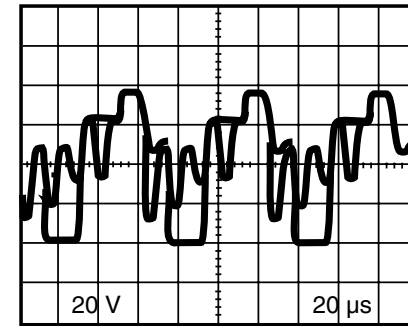
WF2 MAIN 2/3 SCHEMATIC DIAGRAM
 IC401 PIN 67



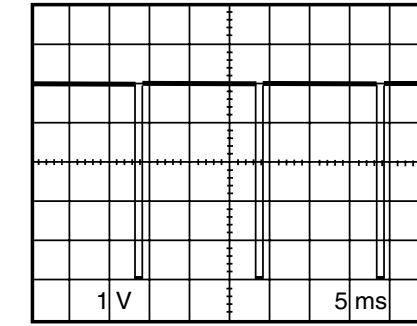
Upper: WF6 Lower: WF1
 MAIN 2/3 SCHEMATIC DIAGRAM TP004 C-PB



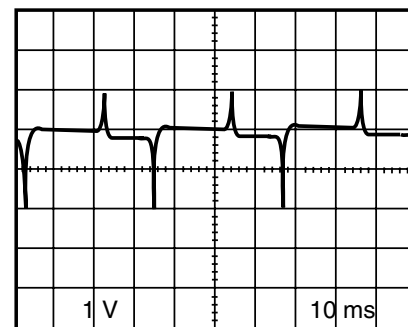
WF10 MAIN 3/3 SCHEMATIC DIAGRAM
 IC301 PIN 29



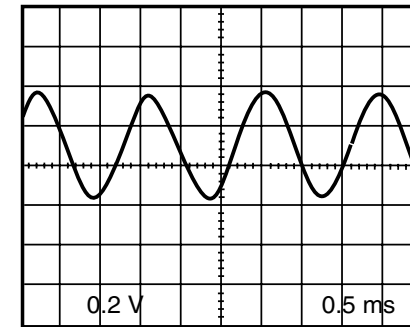
WF14 CRT SCHEMATIC DIAGRAM
 Q501 COLLECTOR



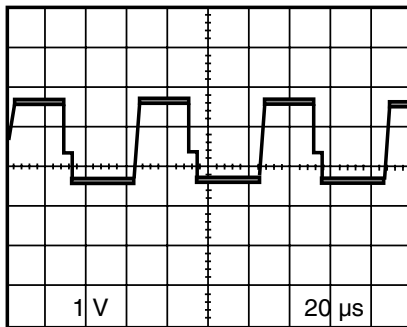
WF18 MAIN 1/3 SCHEMATIC DIAGRAM
 IC201 PIN 59



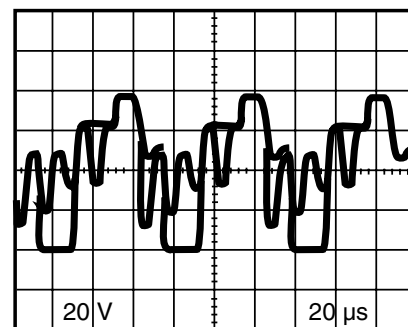
WF3 MAIN 1/3 SCHEMATIC DIAGRAM
 TP008 CTL



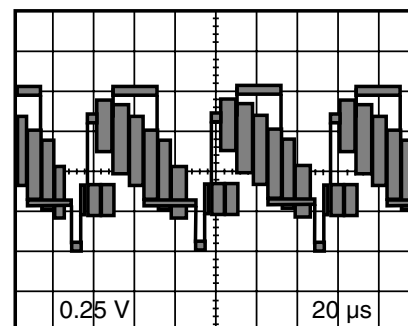
WF7 MAIN 3/3 SCHEMATIC DIAGRAM
 IC301 PIN 47



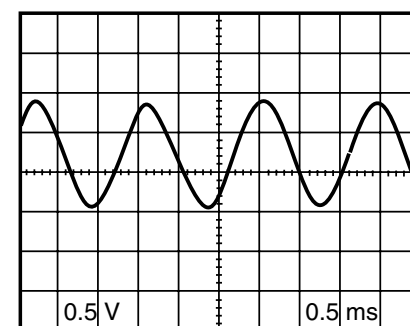
WF11 MAIN 3/3 SCHEMATIC DIAGRAM
 IC301 PIN 7



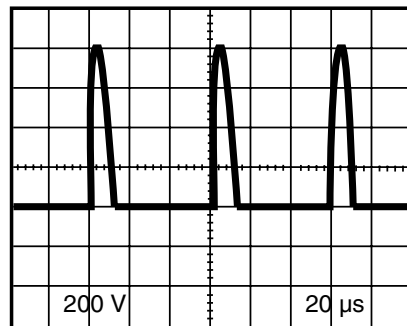
WF15 CRT SCHEMATIC DIAGRAM
 Q502 COLLECTOR



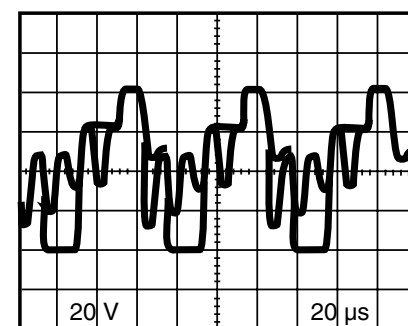
WF4 MAIN 2/3 SCHEMATIC DIAGRAM
 IC401 PIN 59



WF8 MAIN 2/3 SCHEMATIC DIAGRAM
 TP003 A-OUT

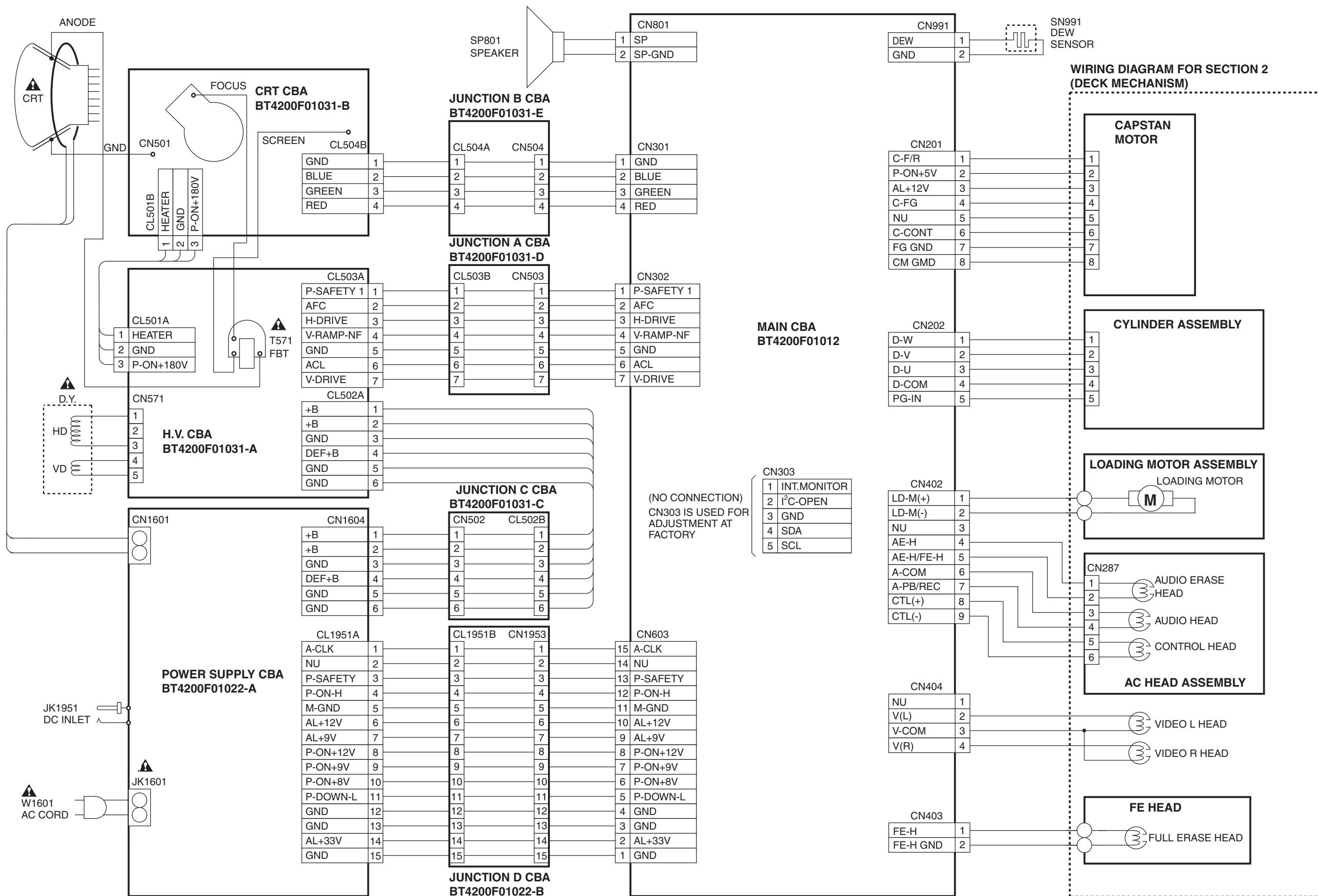


WF12 H/V SCHEMATIC DIAGRAM
 Q571 COLLECTOR



WF16 CRT SCHEMATIC DIAGRAM
 Q503 COLLECTOR

WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS

Chart 1

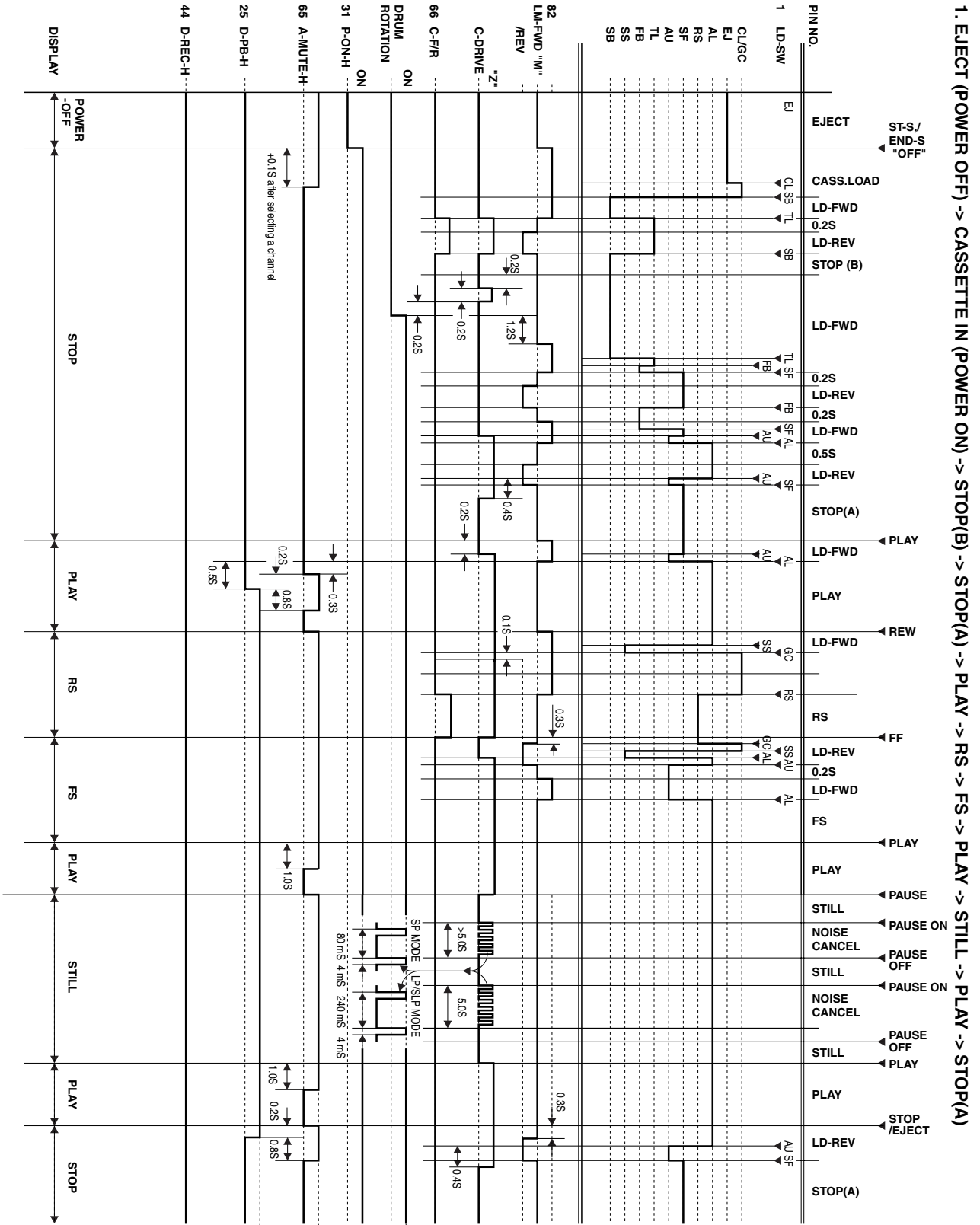
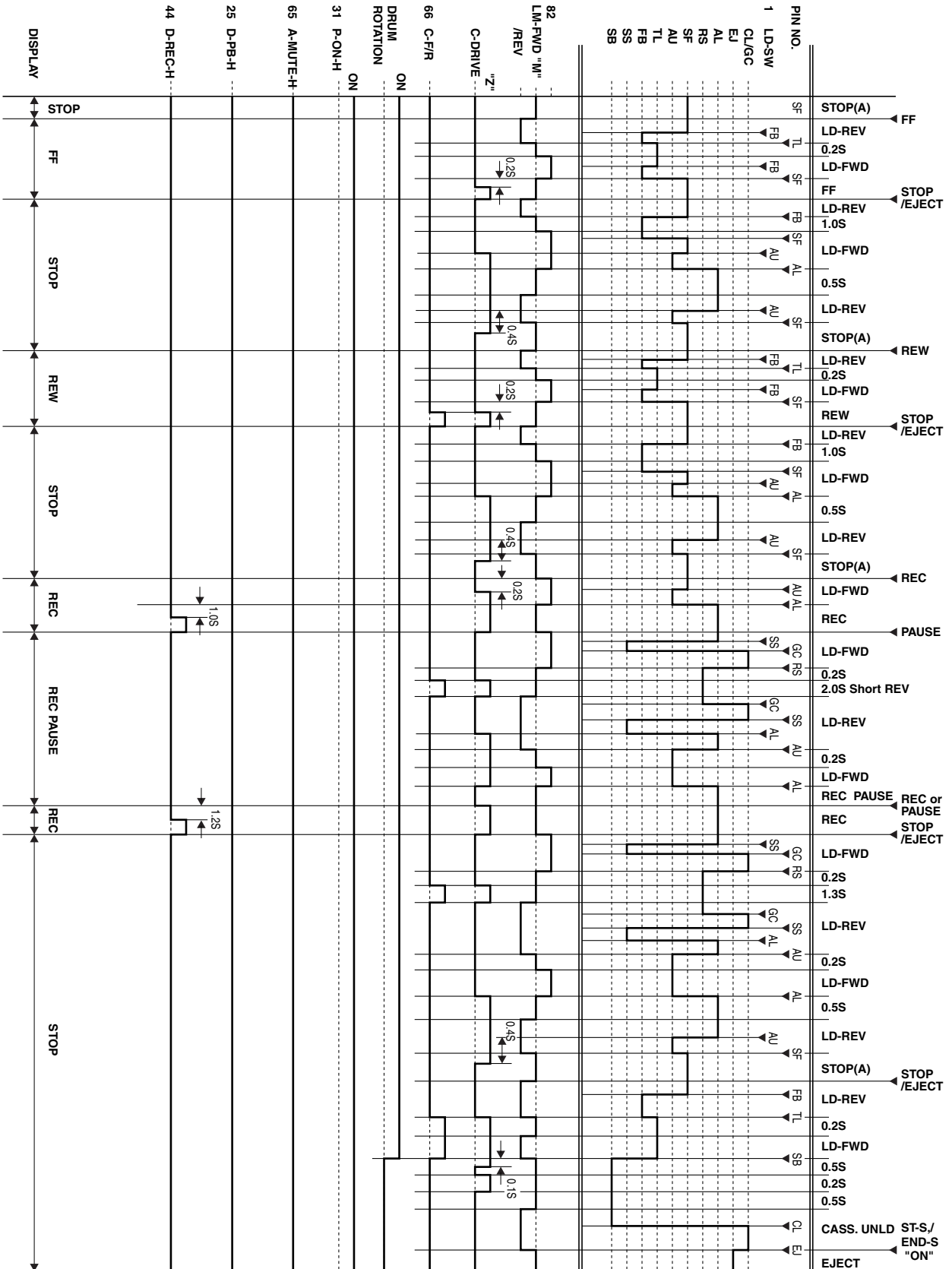


Chart 2

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT



IC PIN FUNCTION DESCRIPTIONS

IC 201 (TV/VCR Micro Computer)

Pin No.	In/Out	Signal Name	Function
1	In	LD-SW	Loading Switch Input
2	In	P-SAFETY 1	Power Supply Failure Detection 1
3	In	P-SAFETY 2	Power Supply Failure Detection 2
4	Out	NU	Not used
5	In	KEY0	Key 0 Input
6	In	KEY1	Key 1 Input
7	In	END-SENS	End-Sensor
8	Out	NU	Not used
9	In	ST-SENS	Start-Sensor
10	In	V-ENV	Video Envelope Input
11	Out	NU	Not used
12	Out	SP-MUTE	Speaker Mute Output
13	In/Out	D-V SYNC	Artificial V-Sync Output
14	In	REMOTE	Remote signal Input
15	Out	ROTA	ROTA Output
16	Out	NU	Not used
17	In	NU	Not used
18	Out	RF-SW	RF-SW Output
19	Out	NU	Not Used
20	Out	NU	Not used
21	Out	SLP-L	SLP Output
22	In/Out	NU	Not used
23	Out	REC-LED	Recording LED
24	Out	REC-LED	Recording LED
25	Out	NU	Not Used
26	In	NU	Not Used
27	In/Out	REC/EE/PB	YCA IC Mode Output
28	In/Out	TAPE-SPEED	Tape Speed Output
29	Out	EXT-H	External Input or Playback = Output
30	In/Out	RENTAL	Rental Position Output

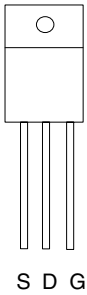
Pin No.	In/Out	Signal Name	Function
31	Out	P-ON-H	P-ON Output
32	Out	SPL-PLAY	Special Playback=Output
33	In	REC-SAFETY	Record Protection Tab Detection
34	In	RESET	Reset
35	In	Xc-in	Oscillator C Input
36	Out	Xc-out	Oscillator C Output
37	--	Timer +5	Timer+5V In
38	In	X-in	Oscillator Input
39	Out	X-out	Oscillator Output
40	--	GND	GND
41	Out	SPOT-KILL	Counter-measure for Spot
42	In	NU	Not used
43	In	CLKSEL	Clock Select
44	Out	D-REC-H	Recording Output
45	In	I2C-OPEN	White Balance Adjust Mode Judgment
46	--	GND	GND
47	Out	NU	Not used
48	Out	NU	Not used
49	--	GND	OSD GND
50	In	NU	Not used
51	In	NU	Not used
52	In	NU	Not used
53	--	P-ON +5V	OSD Vcc
54	--	HLF	HLF
55	In	VHOLD	VHOLD
56	In	CVIN	Video Signal Input
57	--	GND	GND
58	In	H-SYNC	H-Sync Input
59	In	V-SYNC	V-Sync Input
60	Out	OUT	Output for Picture Cut off
61	Out	NU	Not used
62	Out	OSD-B	Blue Output
63	Out	OSD-G	Green Output
64	Out	OSD-R	Red Output
65	Out	A-MUTE-H	Audio Mute Output
66	Out	C-F/R	Capstan Direction Output

Pin No.	In/Out	Signal Name	Function
67	I/O	NU	Not used
68	Out	NU	Not used
69	Out	NU	Not used
70	Out	NU	Not used
71	Out	SCL	E2PROM/CHROMA IC Tuner Communication Clock
72	In/Out	SDA	E2PROM/CHROMA IC Tuner Communication Data
73	Out	NU	Not used
74	In	C-SYNC	C-SYNC out
75	Out	NU	Not used
76	Out	C-CONT	Capstan Control Output
77	Out	D-CONT	Drum Control Output
78	Out	NU	Not used
79	In	NU	Not used
80	In	T-REEL	Take up Reel Pulse in
81	In	NU	Not used
82	In/Out	LDM-CONT	Loading Motor Control
83	Out	NU	Not used
84	Out	P-DOWN-L	Power Down Detection
85	In	NU	Not used
86	In	NU	Not used
87	In	C-FG	Capstan-FG Input
88	--	GND	GND (AMP)
89	In	D-FG	Drum-FG Input
90	In	D-PG	Drum-PG Input
91	Out	NU	Not used
92	In	AMP Vref in	Standard Voltage Input
93		C	Ext. Capacitor Connection Port for Analog Amp
94	I/O	CTL (-)	CTL (-)
95	I/O	CTL (+)	CTL (+)
96		AMPC	AMPC
97	Out	CTL AMPout	CTL Amp Output

Pin No.	In/Out	Signal Name	Function
98	--	P-ON+5V	Power Supply for AMP
99	--	ALL+5V	A/D, D/A Standard Voltage
100	In	X-RAY	X-Ray Protection

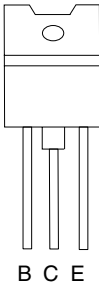
LEAD IDENTIFICATIONS

2SK2876



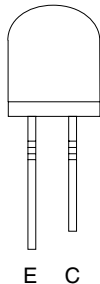
S: Source
D: Drain
G: Gate

2SD2627

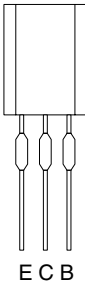


E: Emitter
C: Collector
B: Base

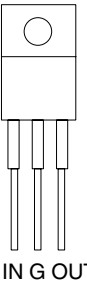
ST-304L



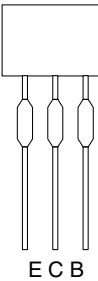
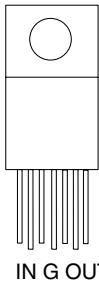
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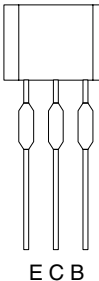
KIA7805



AN5522



KRA103M
KRC103M
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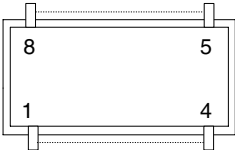


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2SC2120
2SC3331
2SA950
KTC3199

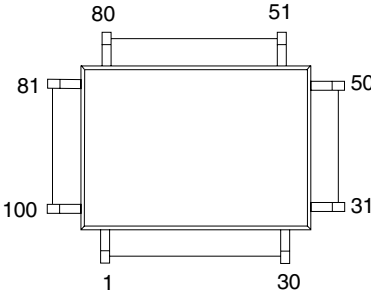
LTV-817



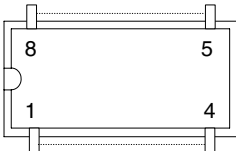
LA4524



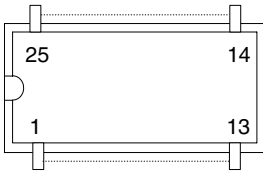
M37760M8H8H8B1GP
LA71090



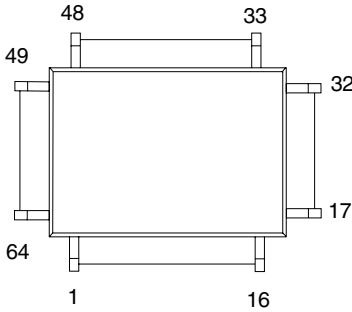
ST24C01FB6



BD6655FP



M61206FP



DECK MECHANISM SECTION

9" COLOR TV/VCR COMBINATION

6309CCB

Sec. 2: Deck Mechanism Section

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

TABLE OF CONTENTS

Standard Maintenance	2-1-1
Service Fixture and Tools.....	2-2-1
Mechanical Alignment Procedures	2-3-1
Disassembly/Assembly Procedures of Deck Mechanism	2-4-1
Alignment Procedures of Mechanism	2-4-9

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		●		●
B27	Tension Lever Sub Assembly		●		●
B31	AC Head Assembly			●	
B573, B574	Reel (S), Reel (T)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
B133	Idler Assembly		●		●
B410	Pinch Arm (A) Assembly		●		●
B414	M Brake S Assembly		●		●
B416	M Brake T Assembly		●		●
B525	LDG Belt		●		●

Notes:

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

* B73 ----- VCR Model only

Cleaning

Cleaning of Video Head

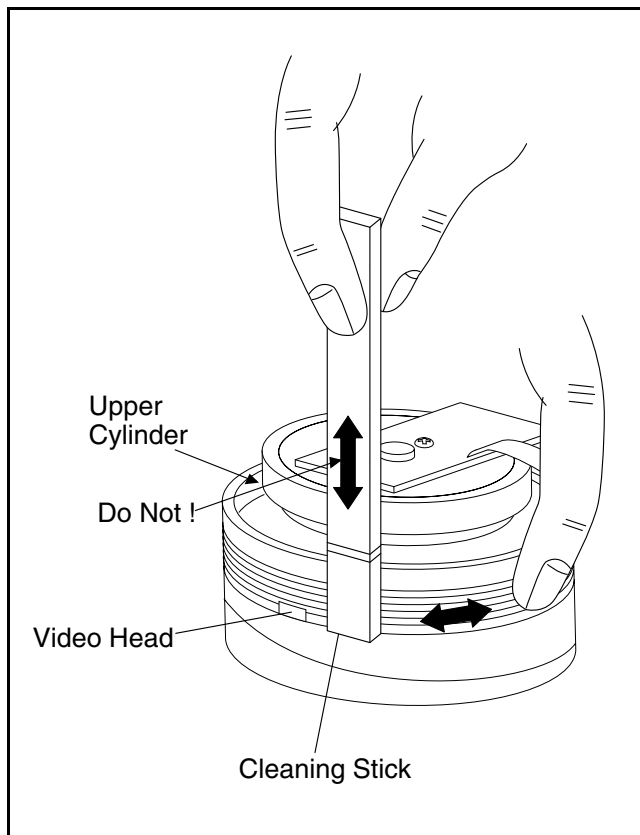
Clean the head with a head cleaning stick or chamois cloth.

Procedure

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

Notes:

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



Cleaning of Audio Control Head

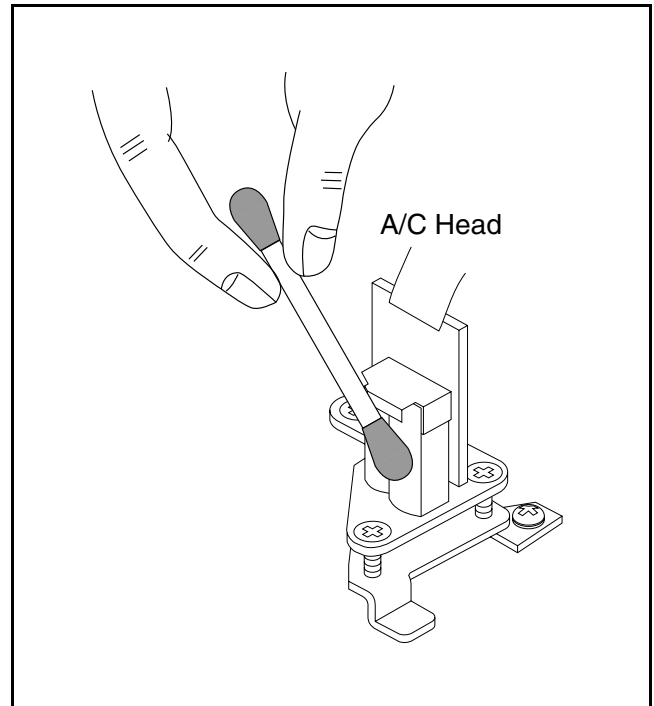
Clean the head with a cotton swab.

Procedure

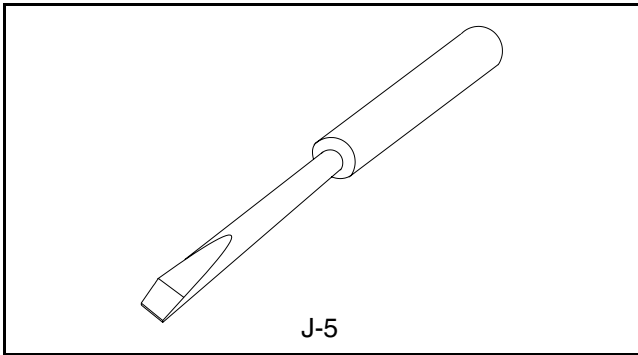
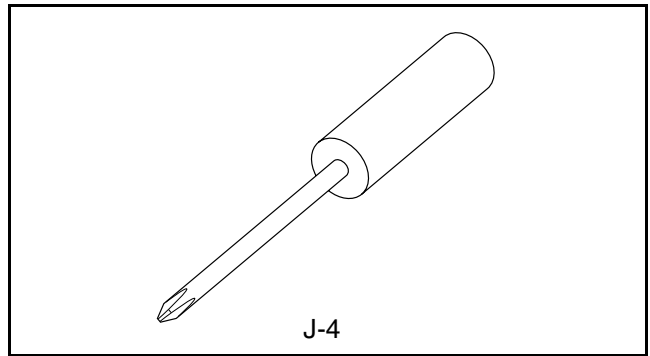
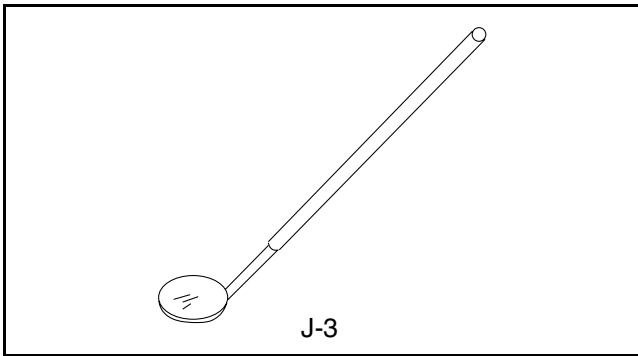
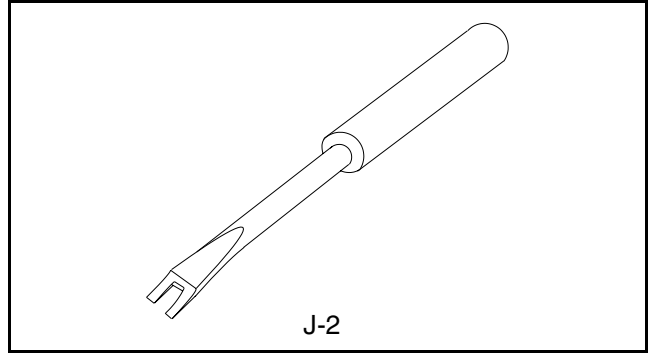
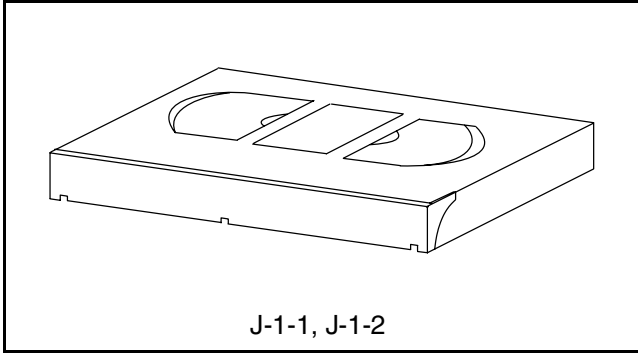
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

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



SERVICE FIXTURE AND TOOLS



Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape	FL8N (2Head only) FL8NW (4Head only)	Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj.Screwdriver	FSJ-0006	Guide Roller
J-3	Mirror	FSJ-0004	Tape Transportation Check
J-4	Azimuth Adj.Screwdriver +	Available Locally	A/C Head Height
J-5	X Value Adj.Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

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

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

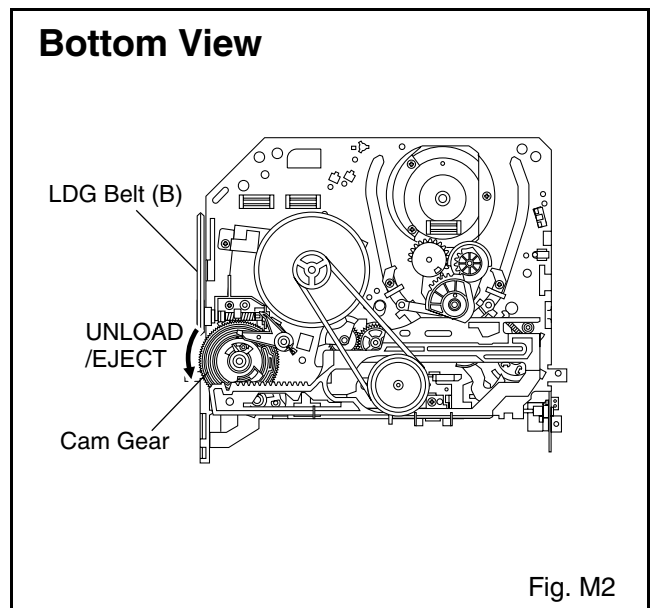
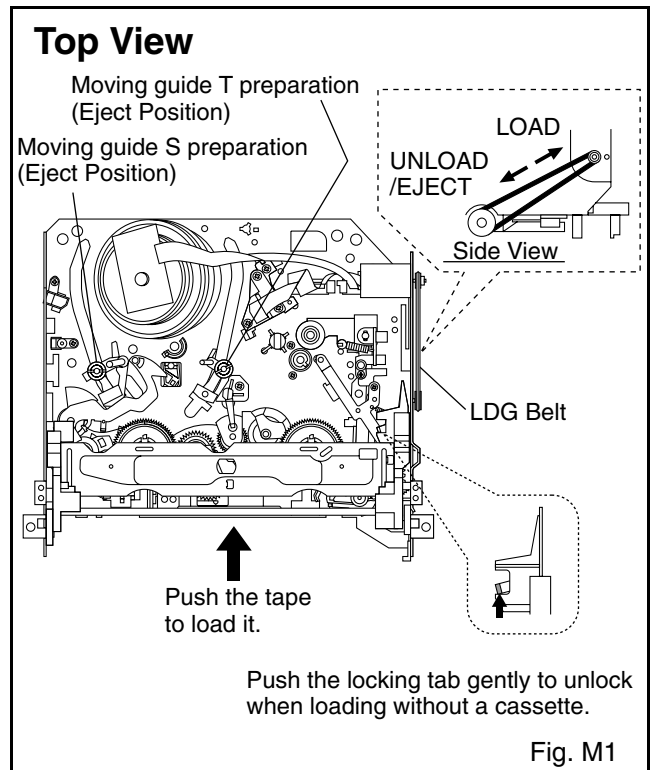
1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see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

To unload a cassette tape manually:

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

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

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



1. Tape Interchangeability Alignment

Note:

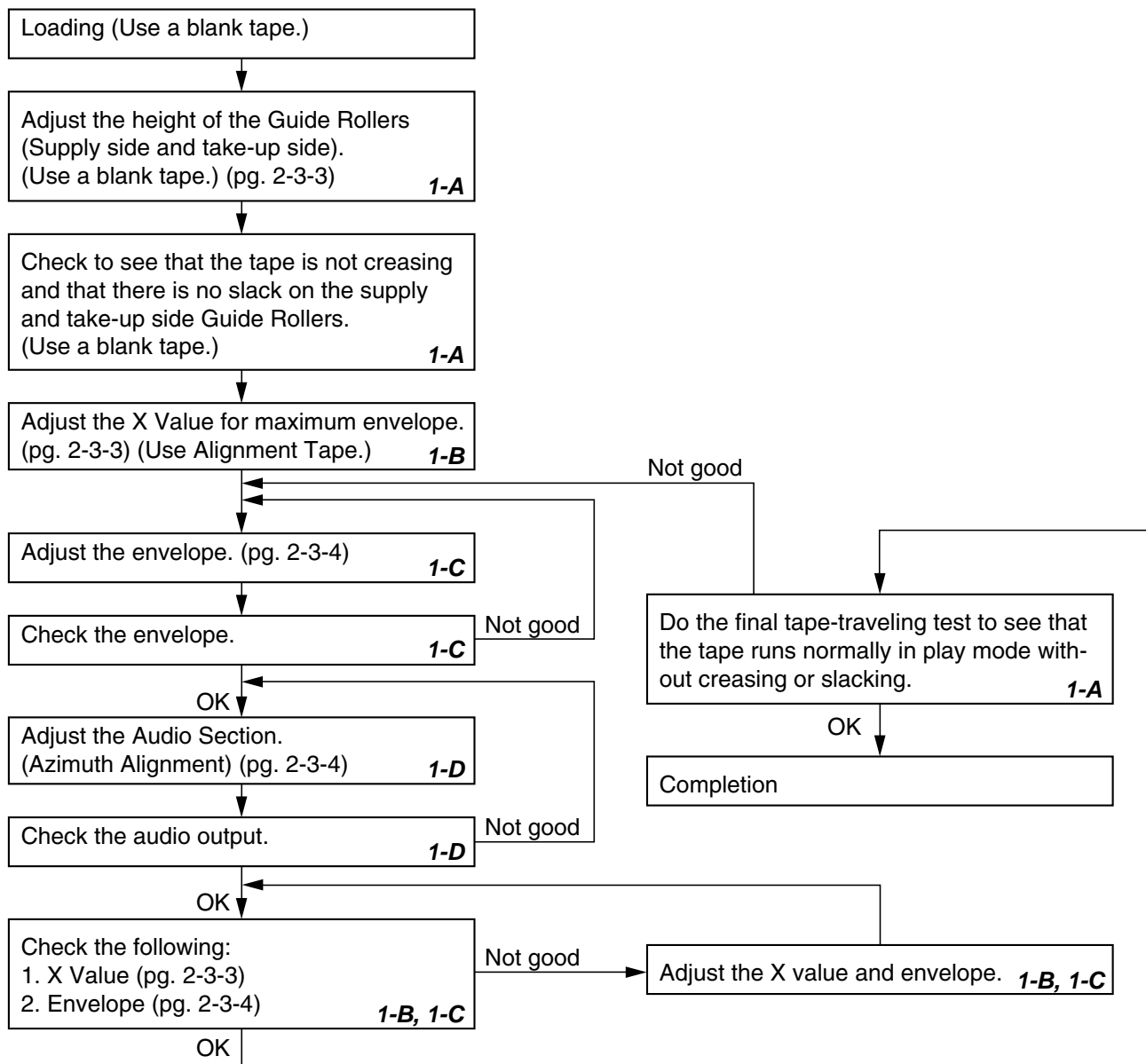
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

- Dual Trace Oscilloscope
- VHS Alignment Tape (FL8N)
- Guide Roller Adj. Screwdriver
- X-Value Adj. Screwdriver

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

Flowchart of Alignment for tape traveling



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

Purpose:

To make sure that the tape path is well stabilized.

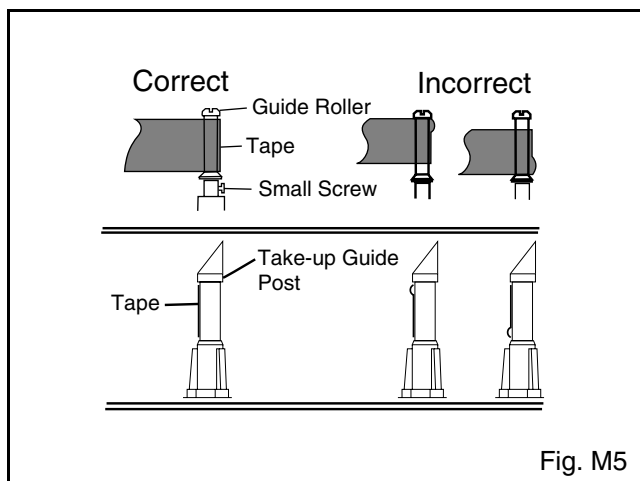
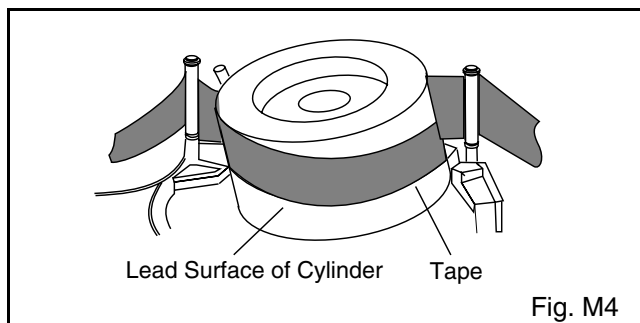
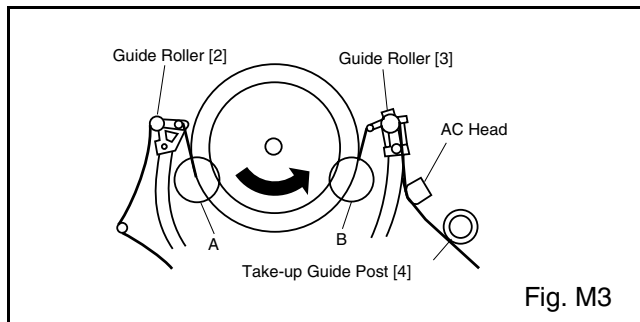
Symptom of Misalignment:

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

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

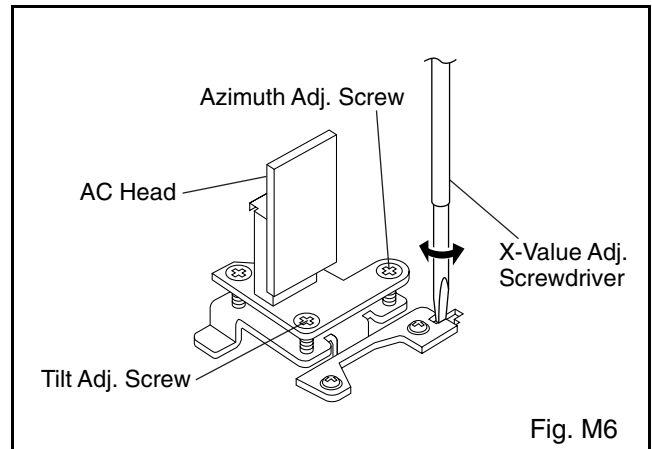
1. Play back a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3]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

Note: Beneath each Guide Roller, there is a small screw. (Refer to Fig. M5.) This screw works



to apply adequate torque to the shaft of each Guide Roller so that the Guide Roller turns properly. Even when adjusting the height of the Guide Roller(s), do not touch these two small screws.

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



1-B. X Value Alignment

Purpose:

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

Symptom of Misalignment:

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

1. Connect the oscilloscope to J139 (C-PB) and J192 (CTL) on the Main CBA. Use J190 (RF-SW) as a trigger.
2. Play back the Gray Scale of the Alignment Tape (FL8N) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing the CH UP button then the PLAY button on the VCR. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at J139 (C-PB) is maximum. (Fig. M6)
5. Press CH UP button on the VCR until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

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

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and precise tracking.

Symptom of Misalignment:

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

1. Connect the oscilloscope to J139 (C-PB) on the Main CBA. Use J190 (RF-SW) as a trigger.
2. Play back the Gray Scale on the Alignment Tape (FL8N). Set the Tracking Control Circuit to the center position by pressing the CH UP and then the PLAY button on the VCR. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

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

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

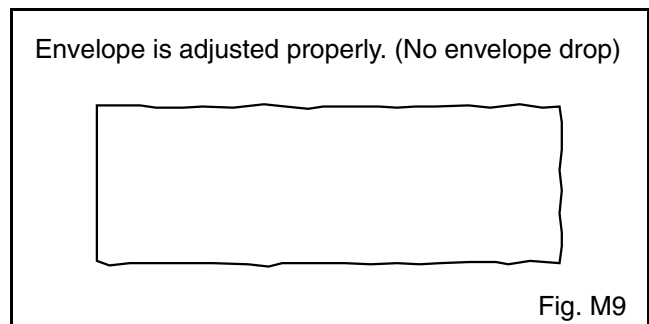
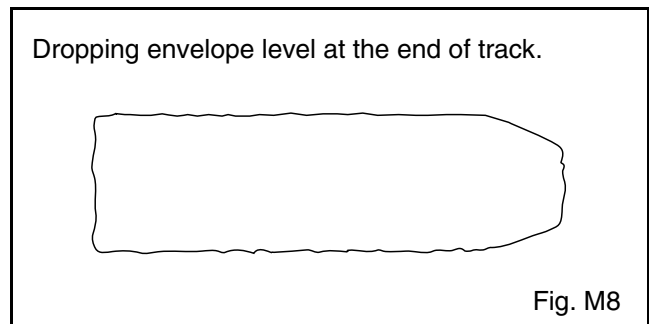
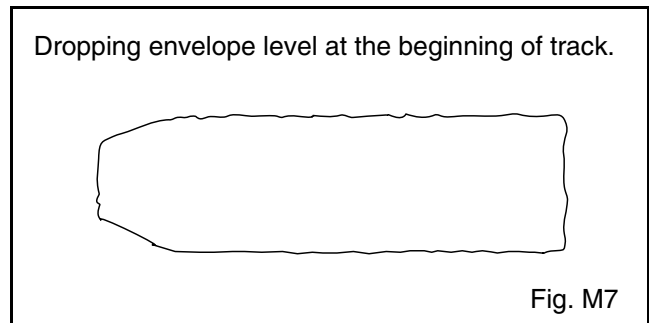
Purpose:

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. Play back the alignment tape (FL8N) and confirm that the audio signal output level is 8 kHz.
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 1-6-1.)

All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [42] and [43] 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]	Cassette Holder Assembly	T	DM3	(S-17)	
[2]	[1]	Slider L	T	DM4	(S-1)	
[3]	[1]	Slider R	T	DM4	(S-2)	
[4]	[3]	Lock Lever	T	DM4	(S-3), *(P-1)	
[5]	[1]	Cassette Plate	T	DM4		
[6]	[6]	Cylinder Assembly	T	DM1, DM5	3(S-4), VH Connector A and B, Connector A and B	
[7]	[7]	Loading Motor Assembly	T	DM1, DM6	2(S-5), (S-6), LDG Belt, ACH Connector AN(9P) and 9B	
[8]	[1]	Tape Guide Assembly	T	DM1, DM7	*(P-2), (C-1)	
[9]	[9]	Door Opener B	T	DM1, DM7	(S-7), *(L-1)	
[10]	[9]	Pinch Arm (B) Assembly	T	DM1, DM7	*(P-3)	
[11]	[10]	Pinch Arm (A) Assembly	T	DM1, DM7		
[12]	[12]	FE Head	T	DM1, DM8	(S-8)	
[13]	[13]	First Post Assembly	T	DM1, DM8	(S-9)	
[14]	[14]	Prism	T	DM1, DM8	(S-10)	
[15]	[15]	Standard Post	T	DM1, DM8	*(L-2)	
[16]	[1]	Slider Shaft	T	DM9	(S-11), *(L-3)	
[17]	[16]	C Drive Lever L	T	DM9		
[18]	[16]	C Drive Lever R	T	DM9		
[19]	[19]	Capstan Motor	B	DM2, DM10	3(S-12), Cap Belt, (S-12A), Radiator Plate	
[20]	[20]	FF Arm Holder	B	DM2, DM11	(S-13)	
[21]	[20]	Clutch Assembly	B	DM2, DM11	(C-2)	
[22]	[20]	FF Arm	B	DM2, DM11		
[23]	[23]	Cam Holder	B	DM2, DM12	(C-3)	
[24]	[23]	Cam Gear (B)	B	DM2, DM12	(C-4), *(P-4)	
[25]	[25]	Mode Gear	B	DM2, DM13	(C-5)	
[26]	[25]	Mode Lever	B	DM2, DM13	(C-6)	
[27]	[26]	Cam Gear (A)	B	DM2, DM13		
[28]	[27]	Pully Assembly	B	DM2, DM13		
[29]	[28]	Worm Holder	B	DM2, DM13	(S-14)	
[30]	[26]	Sensor Gear	B	DM1, DM14	(C-7)	
[31]	[26]	Idler Assembly	B	DM1, DM14		
[32]	[26]	BT Arm	B	DM2, DM14	*(P-5)	

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[33]	[26]	Loading Arm S Assembly	B	DM2, DM14		(+) Refer to Alignment Sec. Pg. 2-4-9
[34]	[33]	Loading Arm T Assembly	B	DM2, DM14		(+) Refer to Alignment Sec. Pg. 2-4-9
[35]	[26]	M Brake T Assembly	T	DM1, DM15	*(P-6)	
[36]	[36]	M Brake S Assembly	T	DM1, DM15	*(P-7)	
[37]	[36]	Tension Lever Sub Assembly	T	DM1, DM15	*(P-8), (C-8)	
[38]	[37]	T Lever Holder	T	DM1, DM15	*(L-4)	
[39]	[1]	M Gear	T	DM1, DM15	(C-9)	
[40]	[35]	Reel T	T	DM1, DM15		
[41]	[37]	Reel S	T	DM1, DM15		
[42]	[41]	Moving Guide S Preparation	T	DM1, DM16	(S-15), Slide Holder S	
[43]	[34]	Moving Guide T Preparation	T	DM1, DM16	(S-16), Slide Holder T	
[44]	[19]	TG Post Assembly	T	DM1, DM16	*(L-5)	
[45]	[27]	Rack Assembly	R	DM17		(+) Refer to Alignment Sec. Pg. 2-4-10
[46]	[45]	F Door Opener A	R	DM17	*(P-9)	
[47]	[47]	Cleaner Lever Assembly	T	DM1,DM5		
[48]	[47]	CL Post	T	DM1,DM5	*(L-6)	

①

②

③

④

⑤

⑥

⑦

- ①: Follow steps in sequence. When reassembling, follow the steps in reverse order. These numbers are also used as Identification (location) No. of parts in the figures.
- ②: Indicates the part to start disassembling with in order to disassemble the part in column (1).
- ③: Name of the part
- ④: Location of the part: T=Top B=Bottom R=Right L=Left
- ⑤: Figure Number
- ⑥: Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered. P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder e.g., 2(L-2) = two Locking Tabs (L-2).
- ⑦: Adjustment Information for Installation
(+): Refer to Deck Exploded Views for lubrication.

Top View

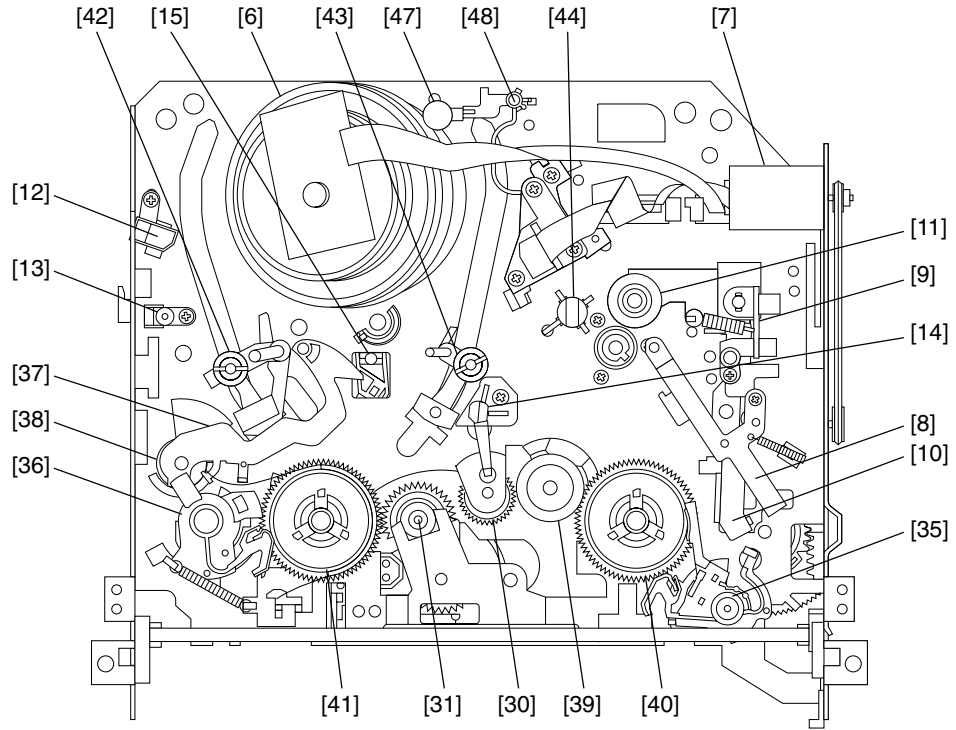


Fig. DM1

Bottom View

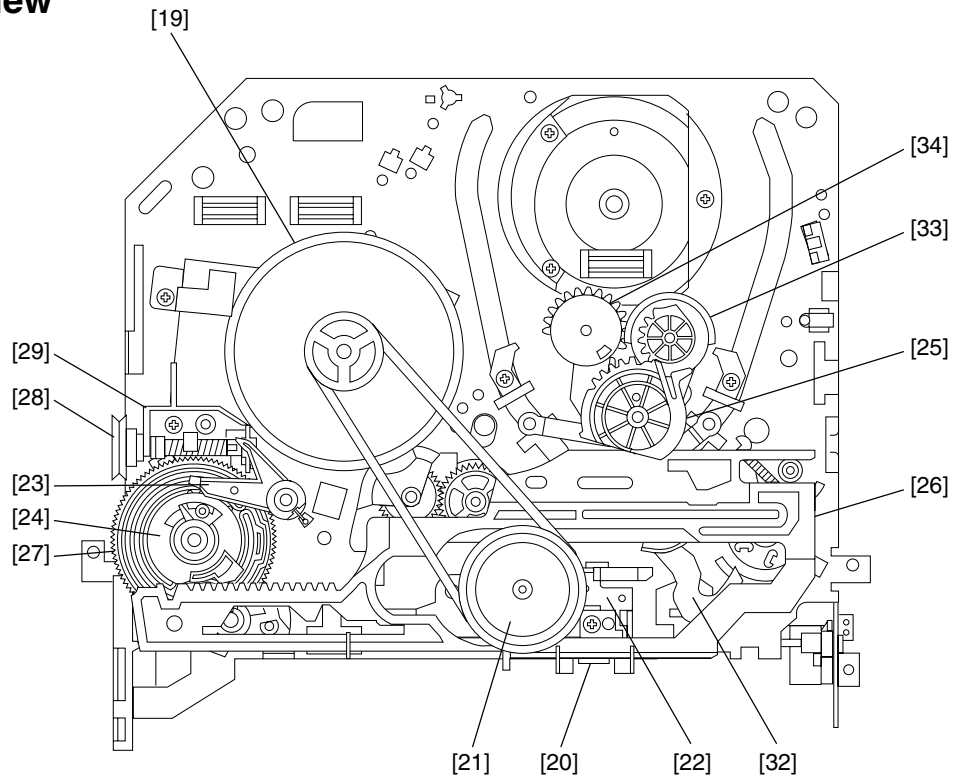
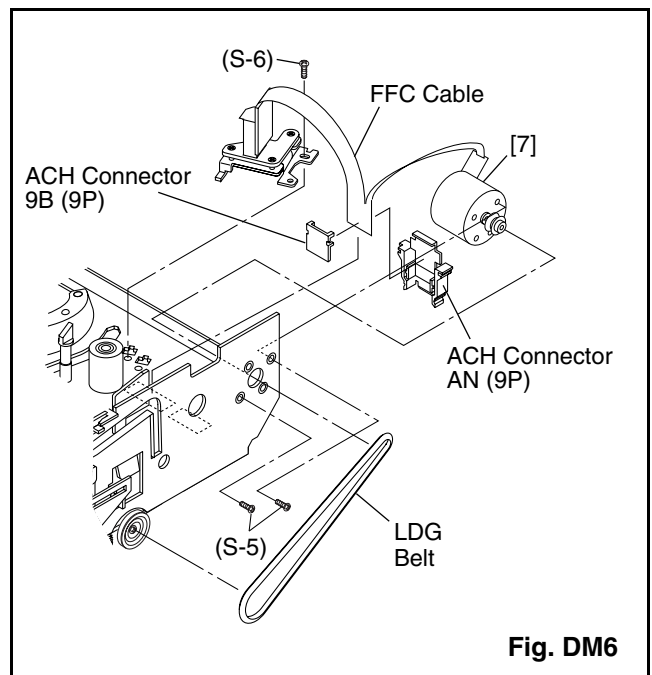
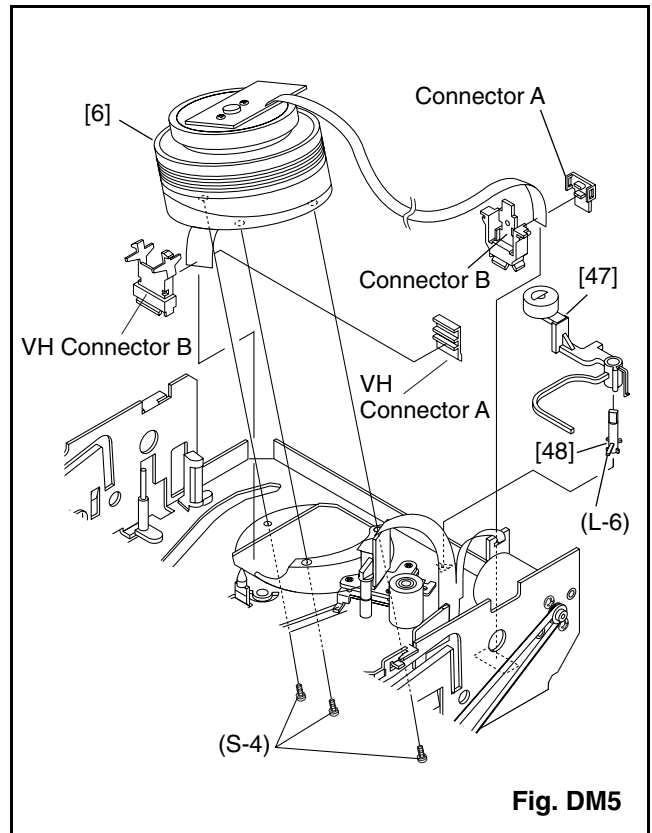
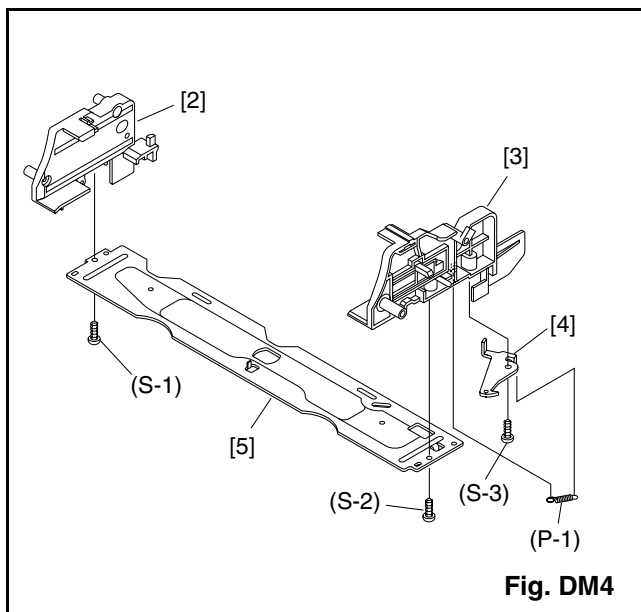
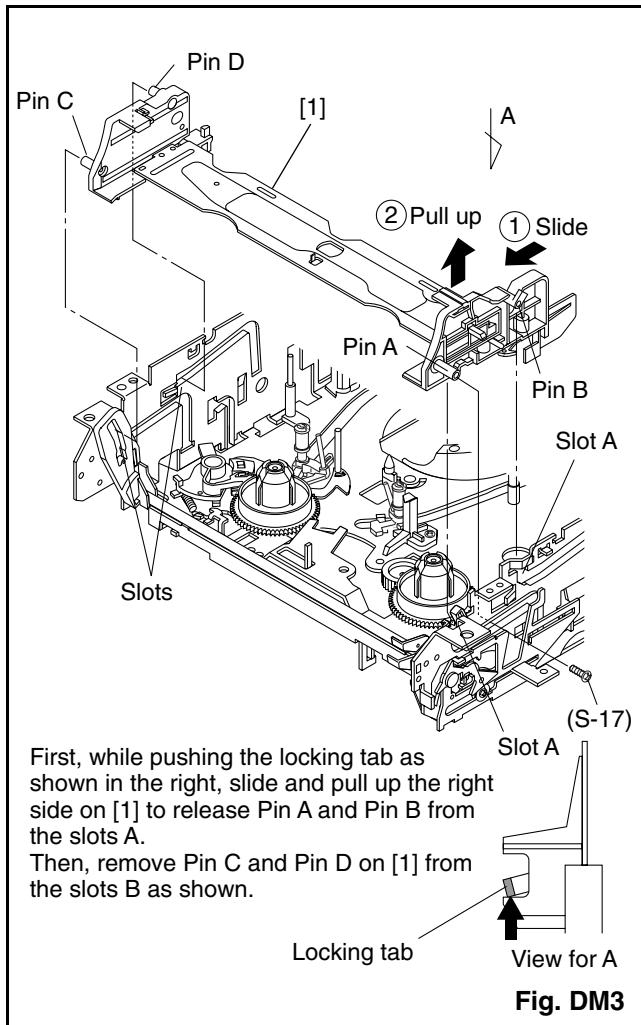


Fig. DM2



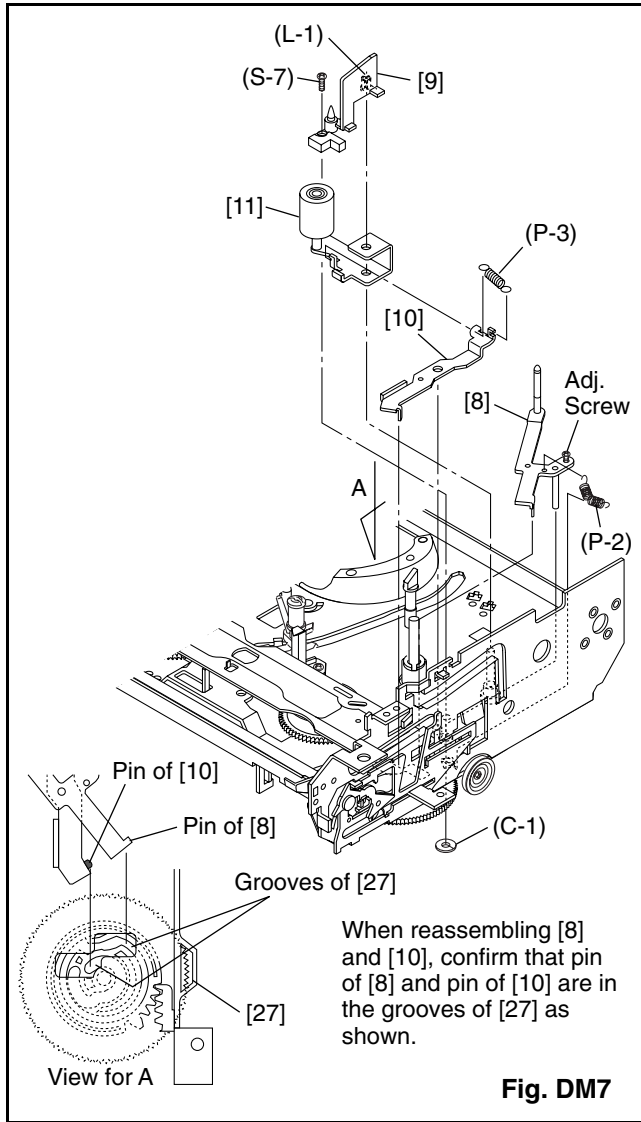


Fig. DM7

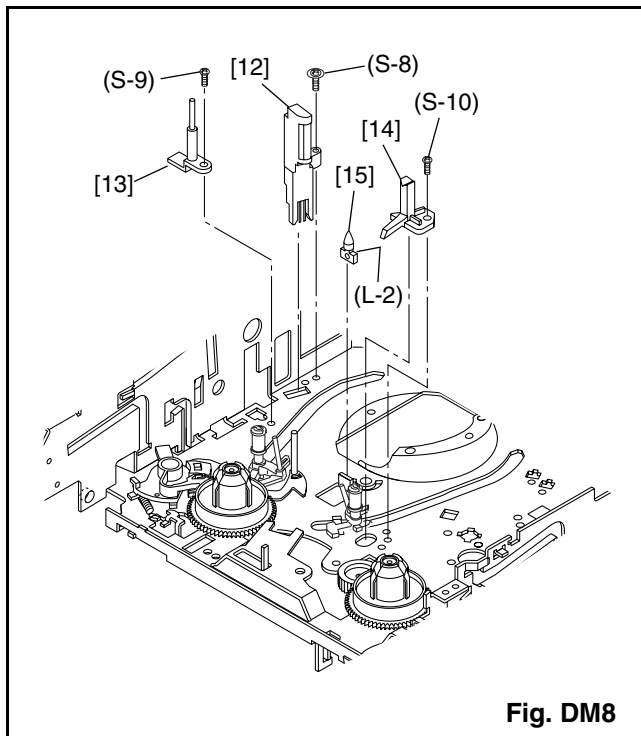


Fig. DM8

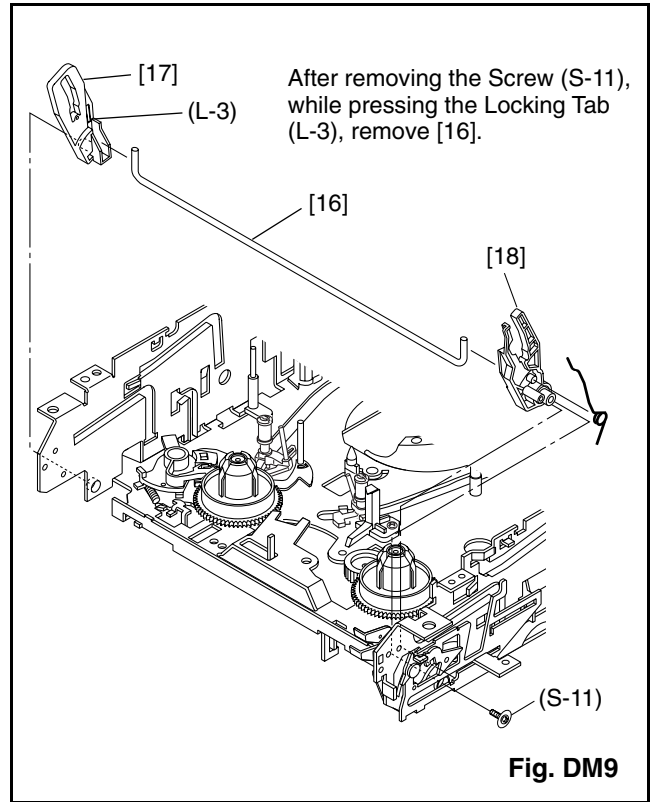


Fig. DM9

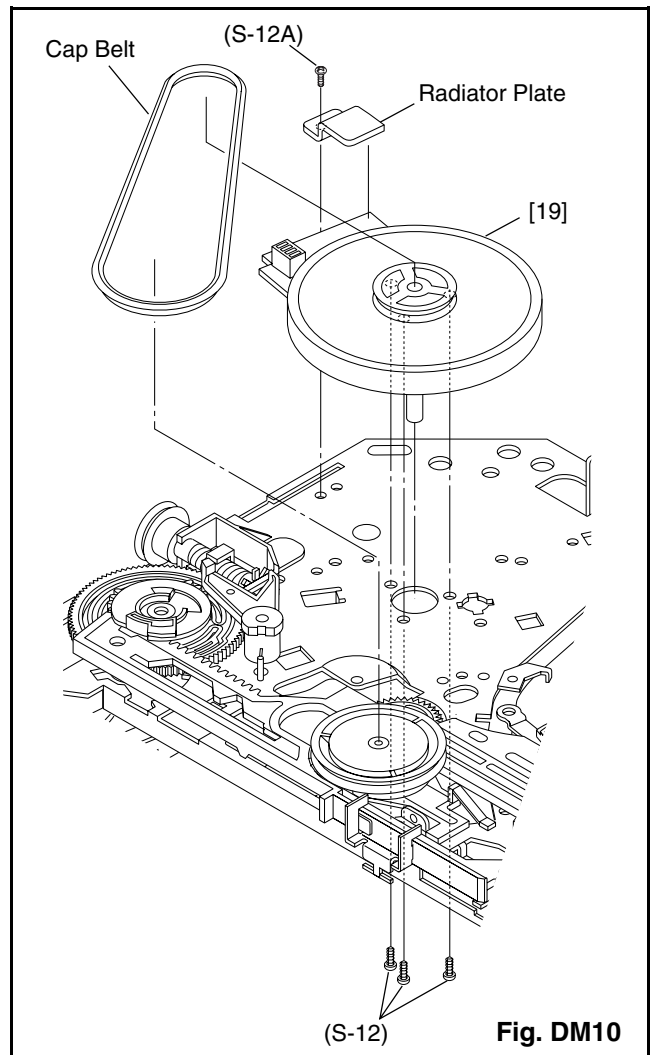
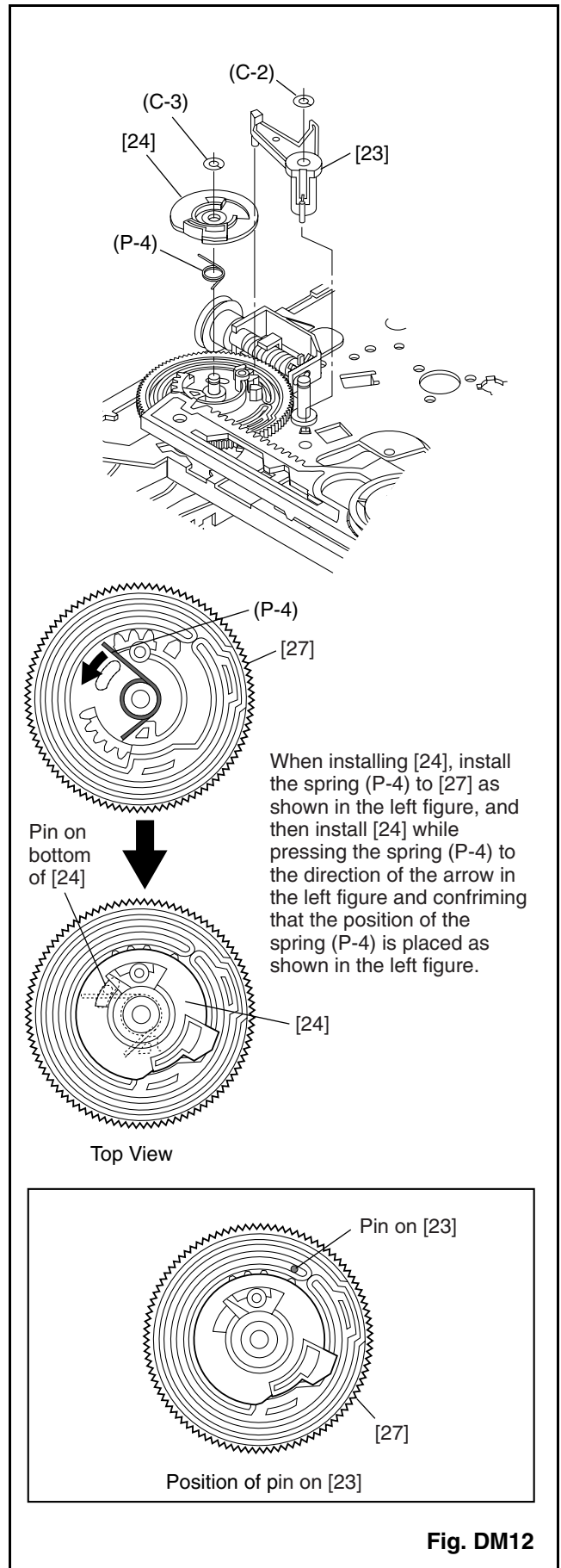
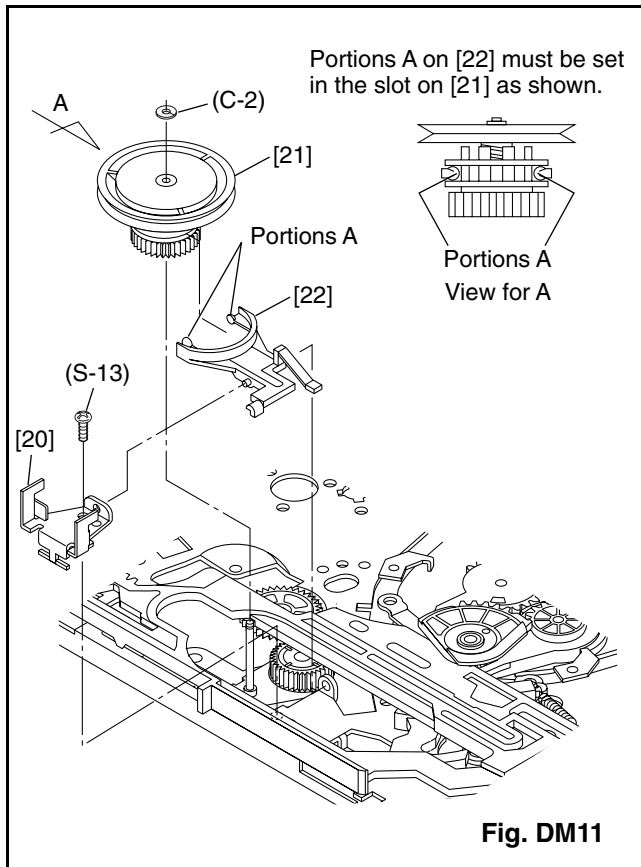


Fig. DM10



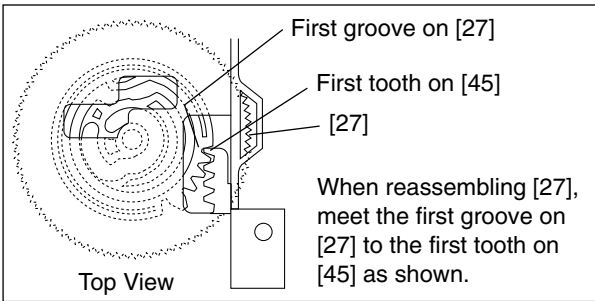
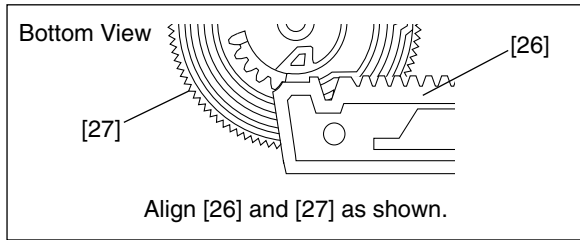
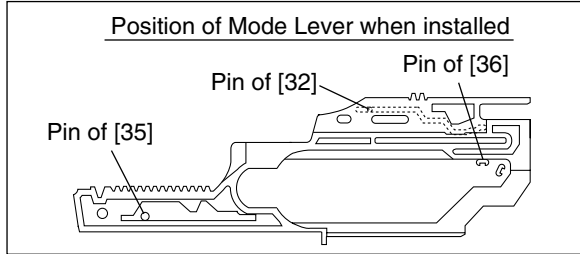
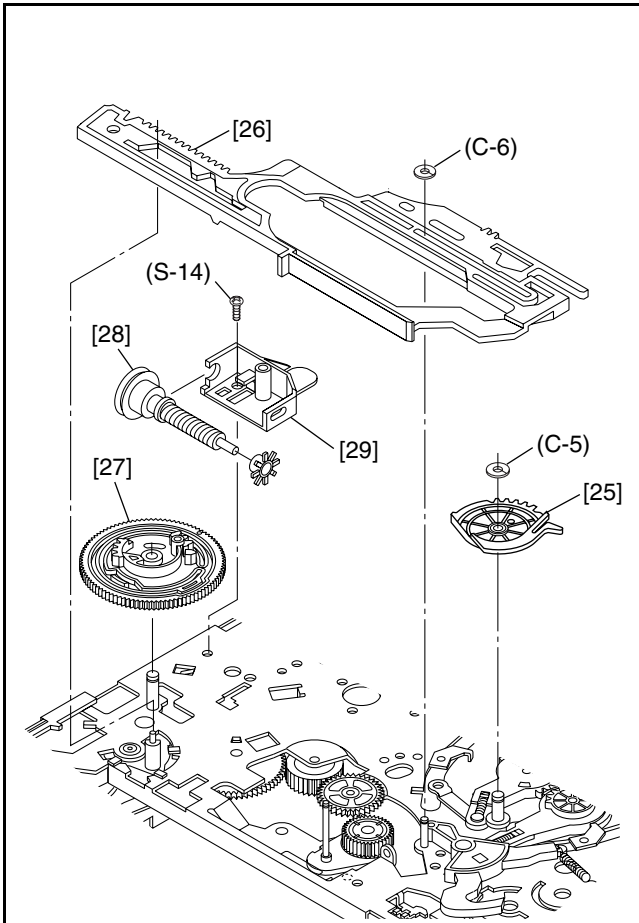


Fig. DM13

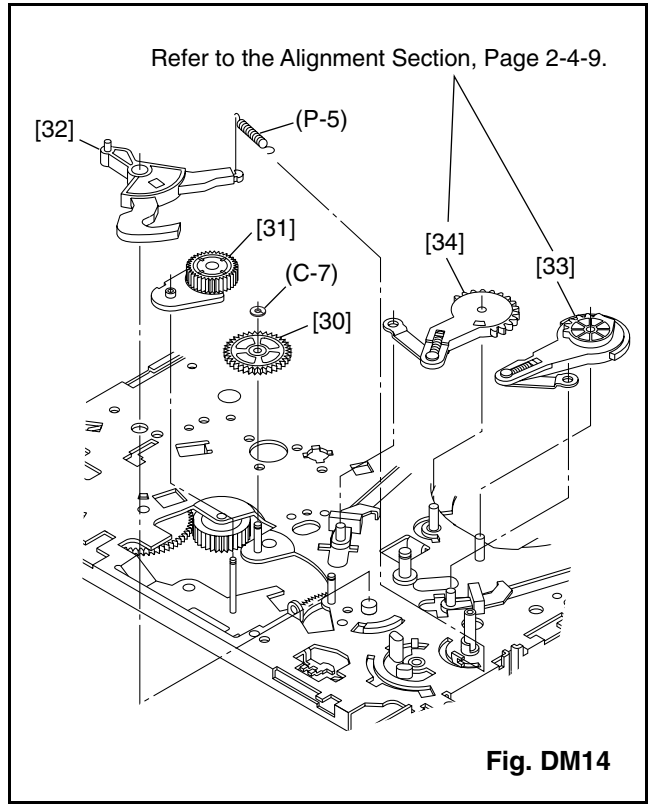


Fig. DM14

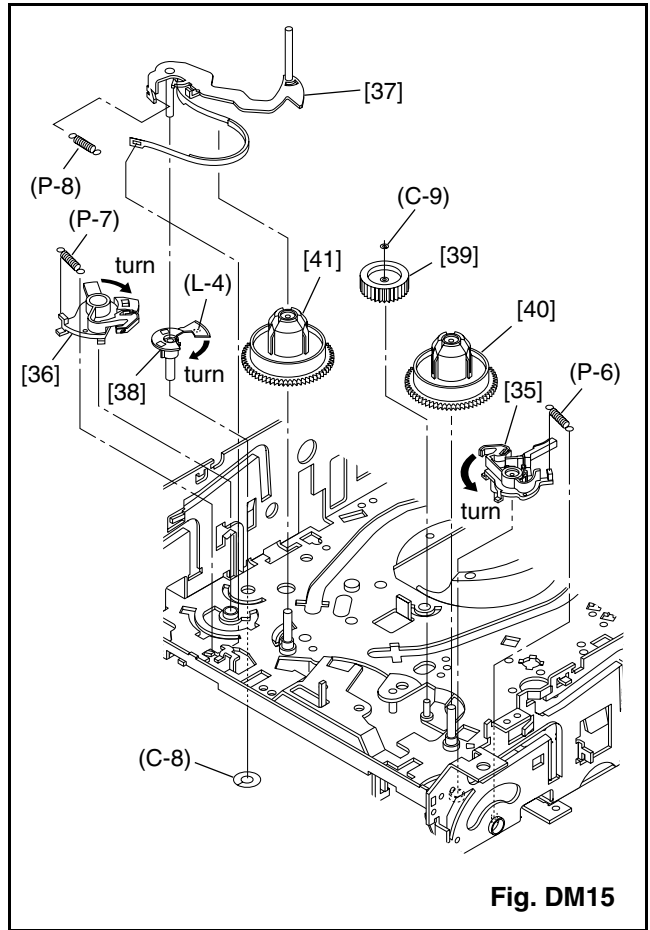
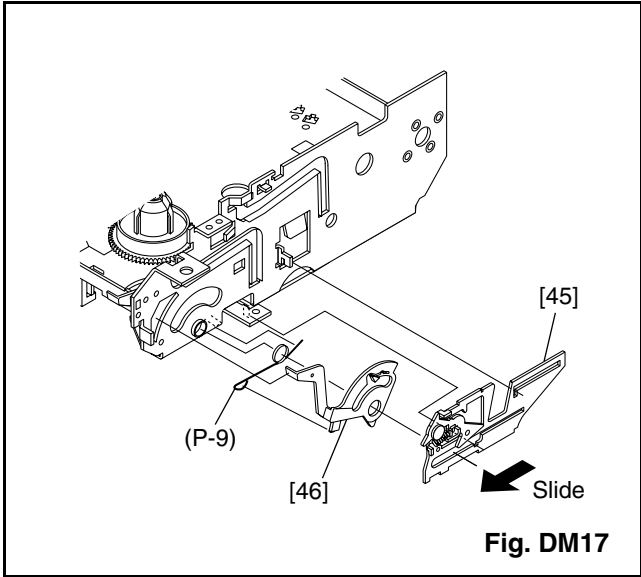
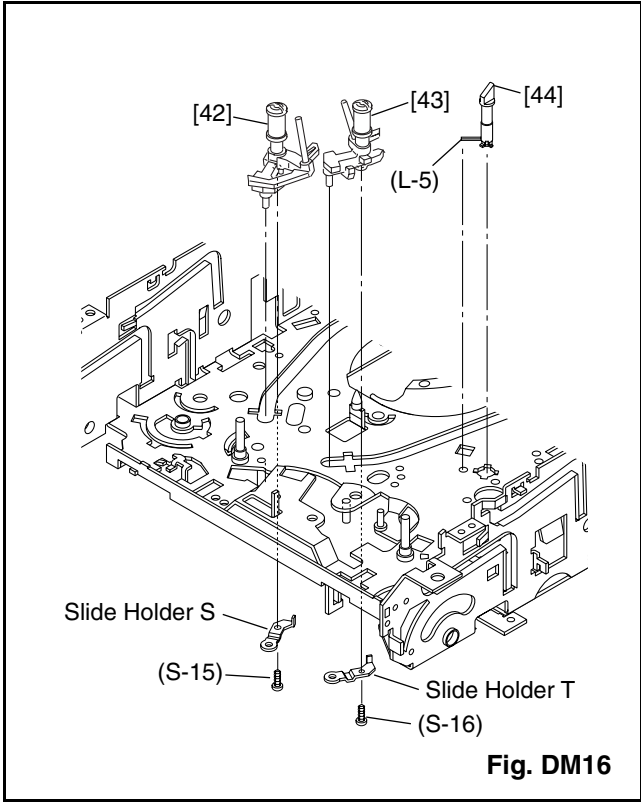


Fig. DM15



ALIGNMENT PROCEDURES OF MECHANISM

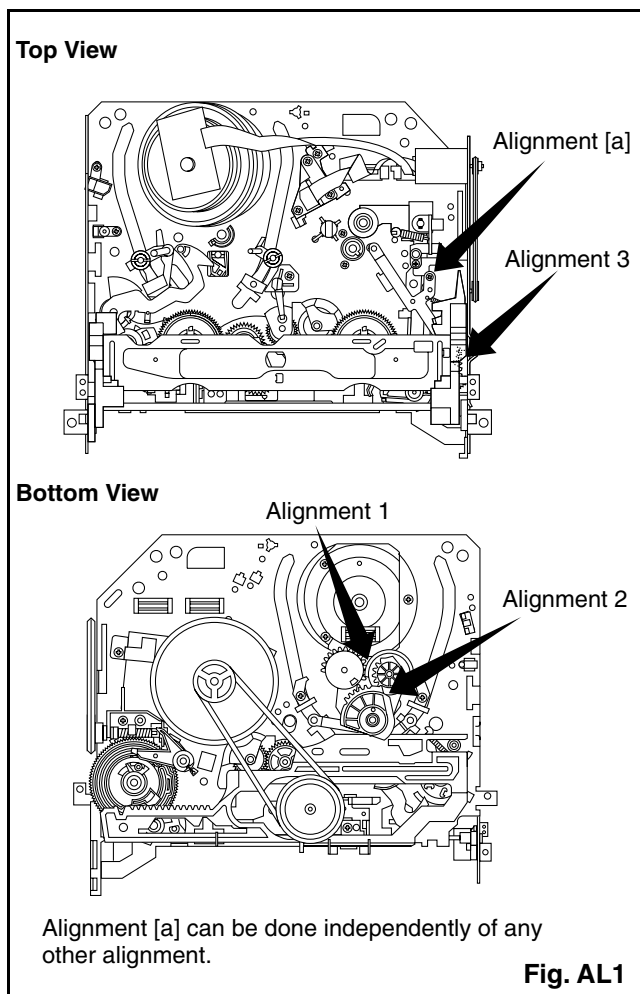
The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between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

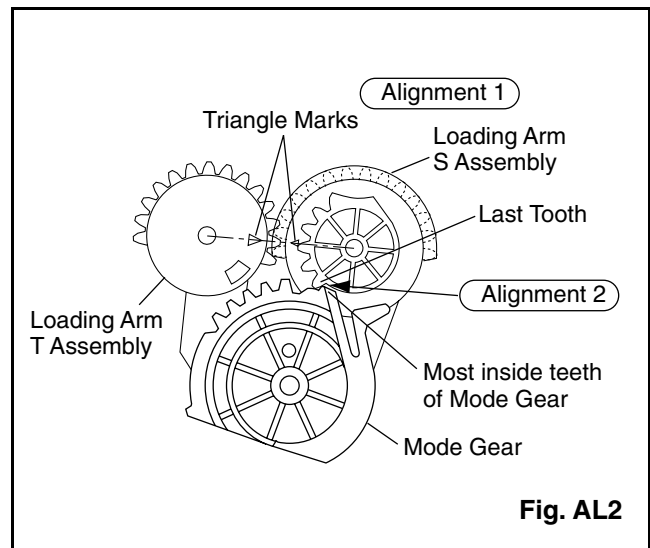
Loading Arm, S and T Assembly

Install Loading Arm S and T Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

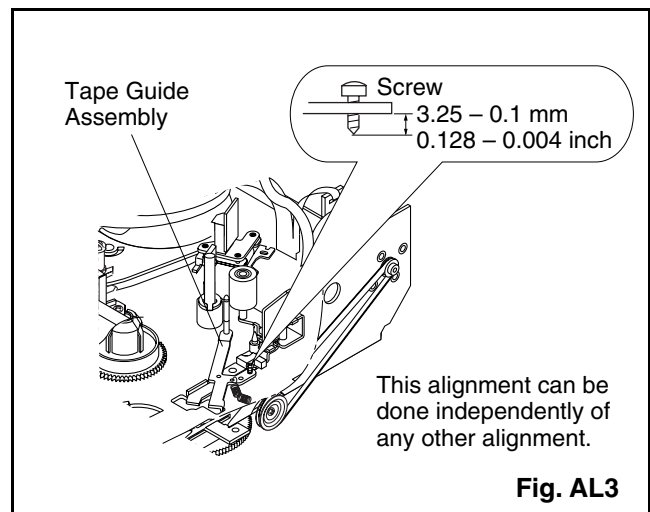
Keeping the two triangles pointing at each other, install the Loading Arm T Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.



Alignment [a]

Tape Guide Assembly

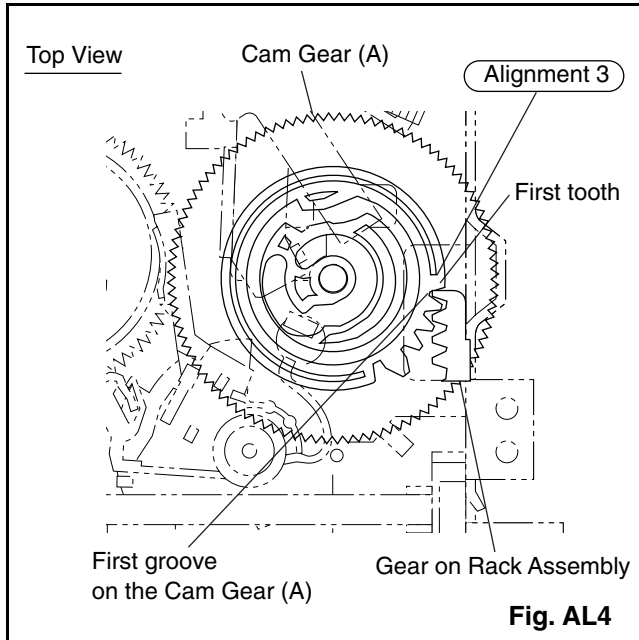
Measurement of the screw must be as specified in Fig. AL3.



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. AL4.



EXPLODED VIEWS AND PARTS LIST SECTION

9" COLOR TV/VCR COMBINATION

6309CCB

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

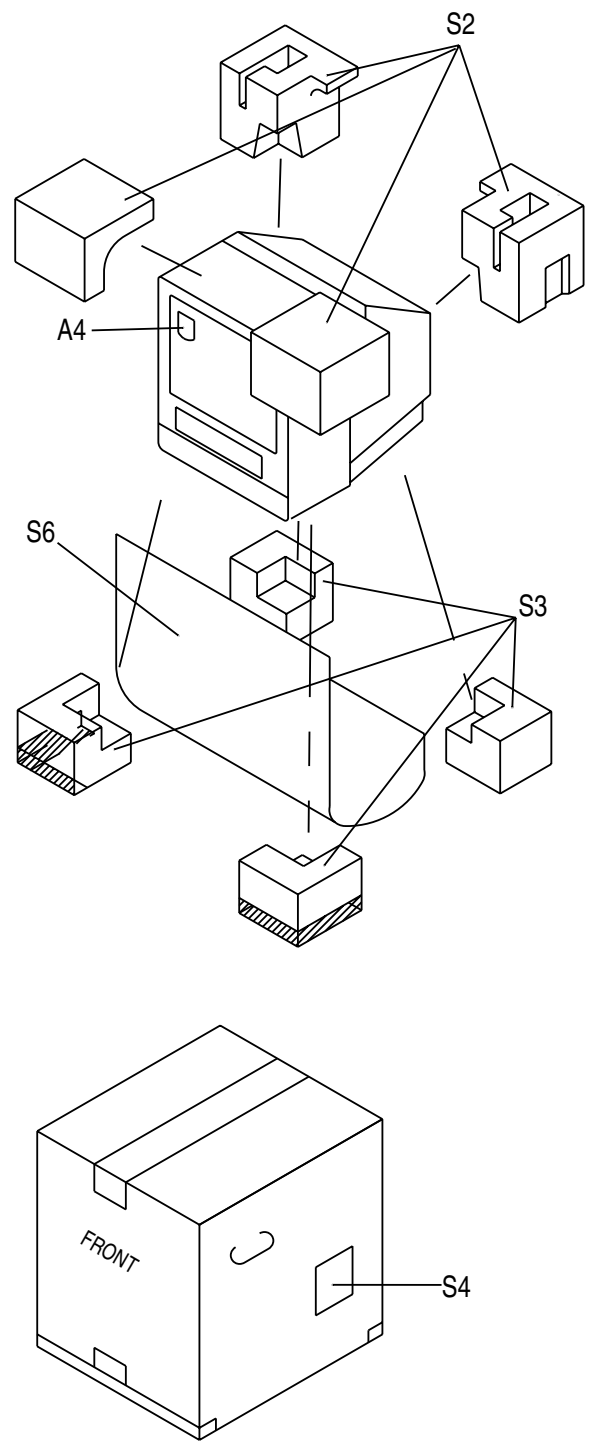
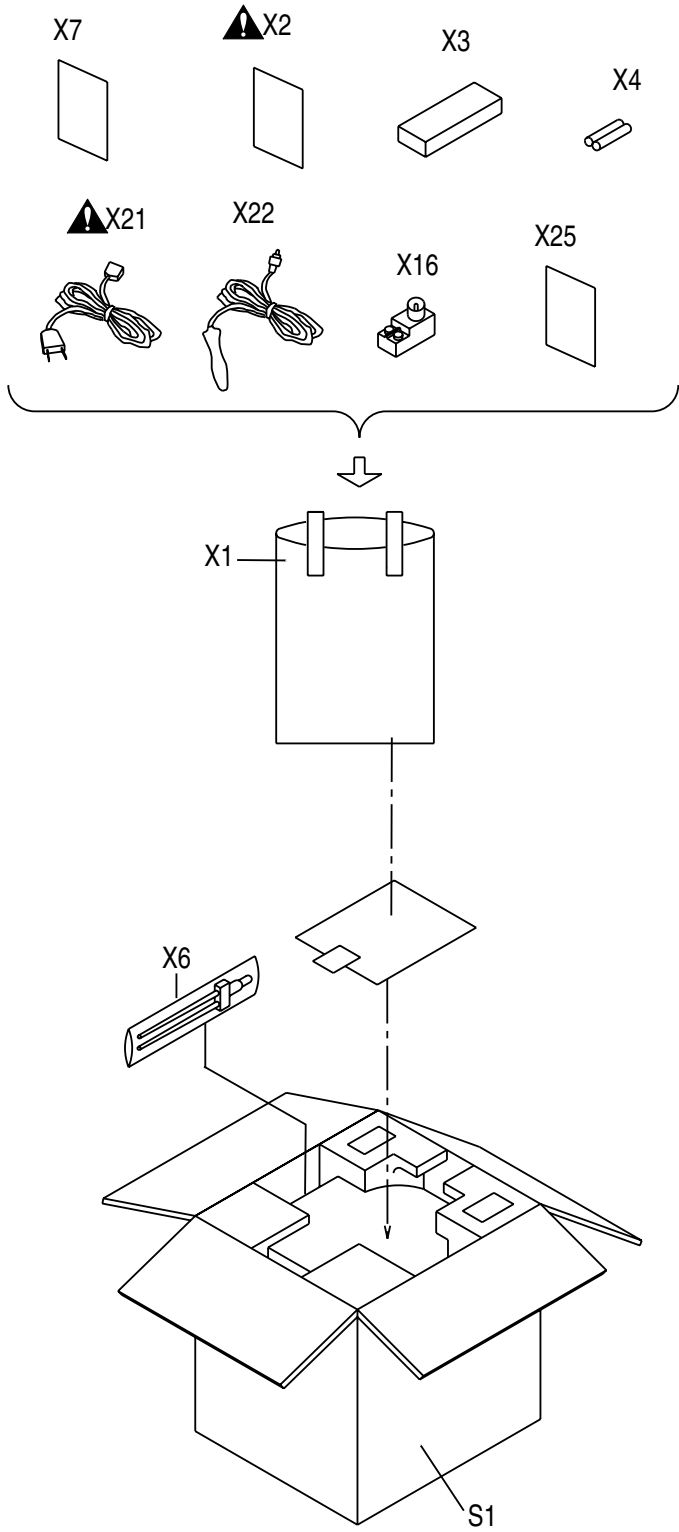
- Exploded views
- Parts List

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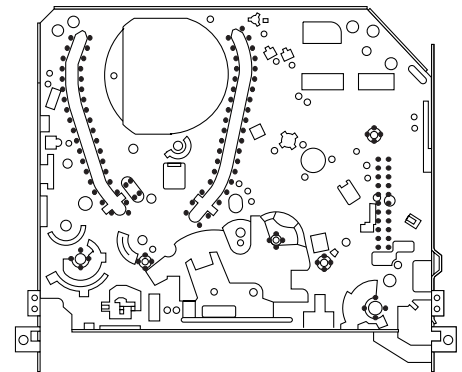
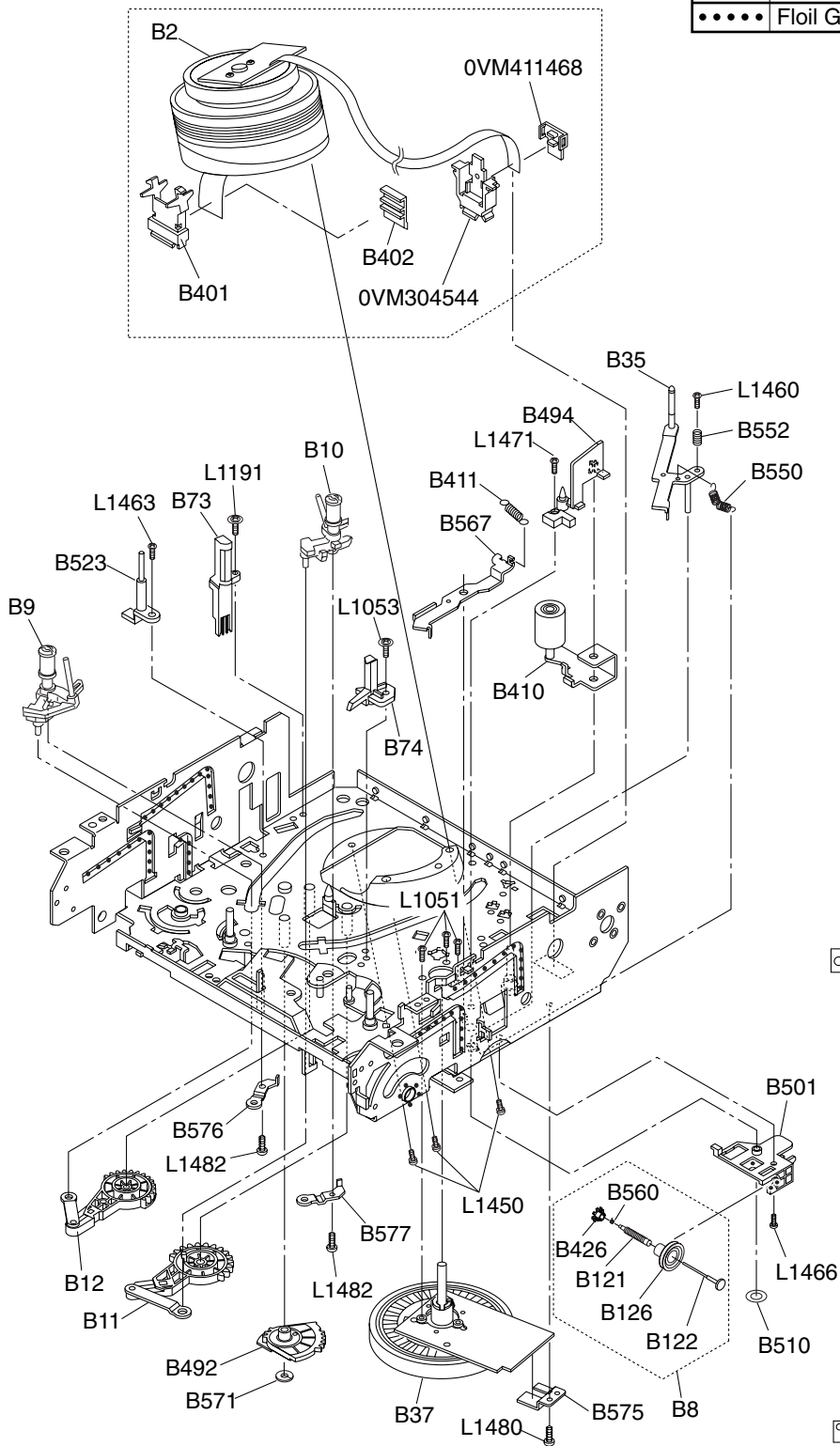
Packing

Some Ref. Numbers are not in sequence.

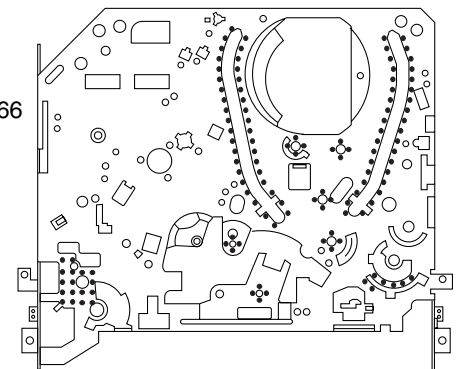


Deck Mechanism View 1

Mark	Description	Part No.
•••••	Floil G-374G (Blue grease)	0VZZ00109



Chassis Assembly
Top View (Grease Point)

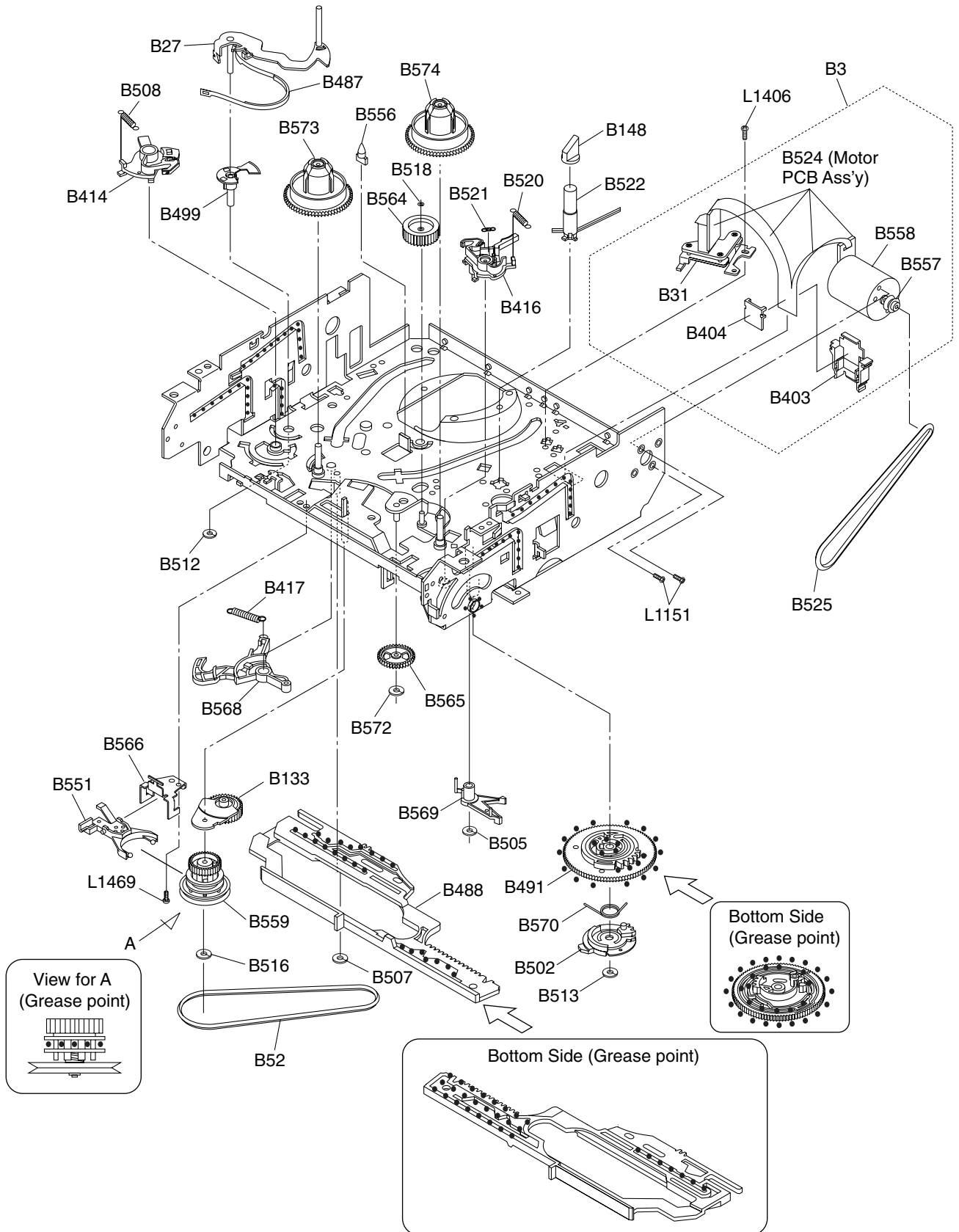


Chassis Assembly
Bottom View (Grease Point)

Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

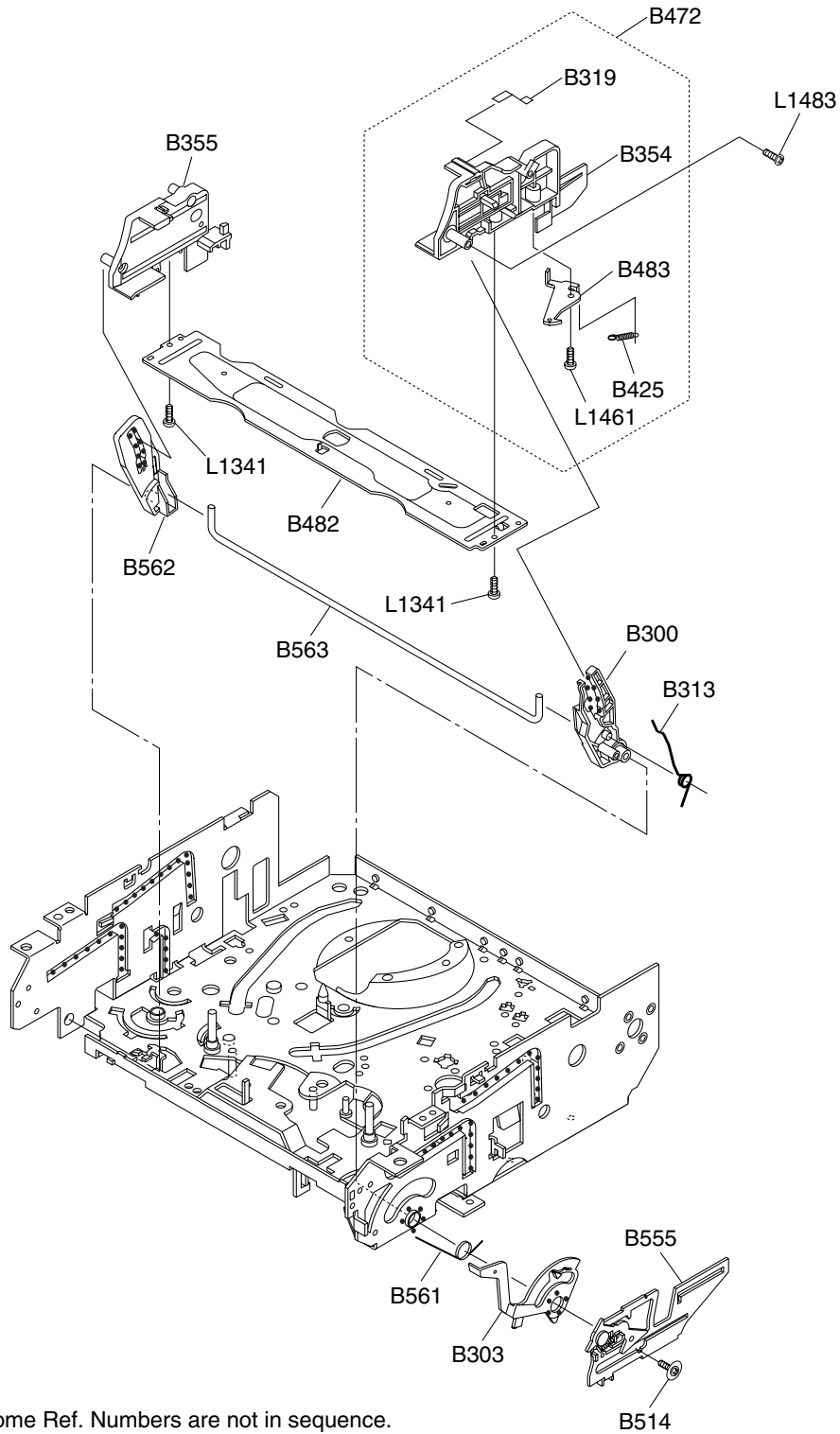
Mark	Description	Part No.
•••••	Floil G-374G (Blue grease)	0VZZ00109



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description	Part No.
•••••	Floil G-374G (Blue grease)	0VZZ00109



Some Ref. Numbers are not in sequence.

MECHANICAL PARTS LIST

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.

Ref No., TB24, TB25 and TB27: See Deck Exploded View

Ref. No.	Description	Part No.
A1X	FRONT CABINET ASSEMBLY T4202UC	0EM201407
A1-1	FRONT CABINET T4000UA	0EM000351
A1-2	CONTROL PLATE T4003UD	0EM301286
A1-3	BRAND PLATE B5916US:SYLVANIA	0EM404400
A1-4	CASSETTE DOOR T4202UC	0EM406245
A1-5	DOOR SPRING B5000UA	0VM403773
A2	REAR CABINET T4000UA	0EM000352
A3▲	RATING LABEL T4204CE	0EM406406
A4	POP LABEL T4102UC	0EM405695
B1	TENSION SPRING B0080B0:EM40808	26VH006
B2	M5 CRT SCREW(B) B4000UA	0VM403923
B3	SHIELD PLATE(Z9 9V) T4100UA	0EM405692A
B5	CLOTH 190X15XT0.5	TS7623
B8	CLOTH B0071V9:TS7346	24WE420
B10	CLOTH(10X30XT0.5) B5900UA	0EM404486
B11	CLOTH(10X30XT0.5) B5900UA	0EM404486
CLN801	WIRE ASSEMBLY 2P/170	WX1B4800-002
DG1601▲	DEGAUSSING COIL F-026 or	LLBH00ZTM026
▲	DEGAUSSING COIL A4100468/A4100469 or	LLBH00ZTZ019
▲	DEGAUSSING COIL AVDG080	LLBH00ZWR030
L1	SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L2	SCREW TAPPING M4X14	DBU14140
L6	SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
1B1	DECK ASSEMBLY CZD006VM1226	N1226FT
SP801	SPEAKER S08F02B	DSD0808XQ010
V501▲	CRT A23KQU22X01	TCRT190SM012
TB1	TRAY CHASSIS T4200UA	0EM000497
TB2	9V TOP SHIELD(2) T4200UA	0EM101093
TB10	RCA HOLDER T4200UA	0EM406165
TB12▲	CRITICAL PARTS WARNING LABEL B8007C3:EM41210	24LH199
TB16	PACK GUIDE L T5200UA	0EM301419
TB17	PACK GUIDE R T5200UA	0EM301420
TB19	REC ARM H7700UD	0VM202907
TB20	REC ARM SPRING MK6	0VM407708C
TB24	CLEANER ROLLER MK9	0VM410032C
TB25	CLEANER LEVER MK10	0VM304413
TB26	CL POST MK10	0VM411114
TB27	CLEANER ASSEMBLY MK10	0VSA11161
TB28	SHIELD, CYLINDER MK10	0VM203074
TL1	SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL3	SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL8	FLAT HEAD SCREW T4000UA	0EM404793
TL9	SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
TL11	SCREW, S-TIGHT M2.6X4 BIND HEAD+	GBMS9040
PACKING		
S1	CARTON T4204CE	0EM406409
S2	STYROFOAM TOP T4200UA	0EM000507
S3	STYROFOAM BOTTOM ASSEMBLY T4200UA	0EM406191

Ref. No.	Description	Part No.
S4	SERIAL NO. LABEL T4204CE	0EM406411
S6	SET SHEET:1000X600XT0.3 L7300UA	0EM401153
ACCESSORIES		
X1	POLYETHYLENE BAG B5310UL	Z223380
X2▲	OWNER'S MANUAL T4204CE	0EMN01784
X3	REMOCON UNIT 512/ERC001/N0111UD or	N0111UD
	REMOCON UNIT 512/ERC001/N0151UD	N0151UD
X4	DRY BATTERY R6P UM3 or	XB0M451GH001
	DRY BATTERY R6P(AR)2PX or	XB0M451HU002
	DRY BATTERY R6P(AR)2P X ICI or	XB0M451HU003
	DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
	DRY BATTERY R6P/2S	XB0M451T0001
X6	DIPOLE ANTENNA B5307UH or	OEMN00723
	DIPOLE ANTENNA B5700UA	OEMN01183
X16	MATCHING ADAPTOR ICM-02N or	UCPGANTPK004
	MATCHING ADAPTOR or	1813641
	MATCHING ADAPTOR	1780258
X21▲	AC CORD SET LA-2142 or	WPV0182LW001
▲	AC CORD HHMAC-99-0031-B	WPV0182HHH01
X22	CAR PLUG CORD	WPZ0202GA004
X25	QUICK SETUP GUIDE T4104CE or	OEMN01725

ELECTRICAL PARTS LIST

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.

NOTES:

1. Parts that not assigned part numbers (-----) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

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

MAIN CBA

Ref.No.	Description	Part No.
	Main CBA Consists of the following	OESA04266
CAPACITORS		
C004	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C005	ELECTROLYTIC CAP. 47µF/25V M or ELECTROLYTIC CAP. 47µF/25V M	CE1EMASDL470 CE1EMASTL470
C006	ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0 CE1JMASDL010 CE1JMASTL010 CE1JMASTL1R0
C007	CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C201	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C203	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C204	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C205	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C207	ELECTROLYTIC CAP. 47µF/25V M or ELECTROLYTIC CAP. 47µF/25V M	CE1EMASDL470 CE1EMASTL470
C208	ELECTROLYTIC CAP. 100µF/6.3V M H7	CE0KMASSL101
C209	CERAMIC CAP.(AX) Y N 0.022µF/6V	CCA0KNT0Y223
C210	ELECTROLYTIC CAP. 1µF/50V M H7 or ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL010 CE1JMASSL1R0
C211	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C212	CERAMIC CAP.(AX) CH J 20pF/50V	CCA1JITCH200
C213	CERAMIC CAP.(AX) CH J 20pF/50V	CCA1JITCH200
C214	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMASSL470
C216	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C217	CERAMIC CAP.(AX) CH J 10pF/50V	CCA1JITCH100
C218	CHIP CERAMIC CAP. CH J 15pF/50V	CHD1JJBCH150
C219	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C220	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMASSL470
C221	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C222	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JKB0B222
C223	ELECTROLYTIC CAP. 1µF/50V M H7 or ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL010 CE1JMASSL1R0
C224	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C225	CERAMIC CAP.(AX) B K 560pF/50V	CCA1JKT0B561
C231	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101

Ref.No.	Description	Part No.
C232	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C233	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C235	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C236	CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C239	ELECTROLYTIC CAP. 22µF/50V M H7	CE1JMASSL220
C240	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JKB0B561
C241	CERAMIC CAP.(AX) Y N 0.022µF/6V	CCA0KNT0Y223
C242	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C243	ELECTROLYTIC CAP. 22µF/16V M LL H7	CE1CMASHL220
C244	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C245	ELECTROLYTIC CAP. 47µF/10V M H7	CE1AMASSL470
C246	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C247	ELECTROLYTIC CAP. 22µF/50V M H7	CE1JMASSL220
C249	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C253	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C254	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C282	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C284	CHIP CERAMIC CAP. F Z 0.1µF/50V or CHIP CERAMIC CAP. F Z 0.1µF/25V	CHD1JZB0F104 CHD1EZB0F104
C286	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C287	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C288	CHIP CERAMIC CAP. F Z 0.1µF/50V or CHIP CERAMIC CAP. F Z 0.1µF/25V	CHD1JZB0F104 CHD1EZB0F104
C289	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C290	CERAMIC CAP.(AX) F Z 0.1µF/50V	CCA1JZTFZ104
C291	ELECTROLYTIC CAP. 100µF/10V M or ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101 CE1AMASTL101
C293	FILM CAP.(P) 0.1µF/50V J or FILM CAP.(P) 0.1µF/50V J or FILM CAP.(P) 0.1µF/50V J TV	CMA1JJS00104 CA1J104MS029 CMB1JJS00104
C294	ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C295	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C301	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C302	ELECTROLYTIC CAP. 220µF/16V M or ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221 CE1CMASTL221
C303	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C304	ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0 CE1JMASDL010 CE1JMASTL010 CE1JMASTL1R0
C305	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C309	ELECTROLYTIC CAP. 100µF/16V M or ELECTROLYTIC CAP. 100µF/16V M	CE1CMASDL101 CE1CMASTL101
C311	PCB JUMPER D0.6-P5.0	JW5.0T
C312	FILM CAP.(P) 0.1µF/50V J or FILM CAP.(P) 0.1µF/50V J or FILM CAP.(P) 0.1µF/50V J TV	CMA1JJS00104 CA1J104MS029 CMB1JJS00104
C313	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C314	ELECTROLYTIC CAP. 100µF/16V M or ELECTROLYTIC CAP. 100µF/16V M	CE1CMASDL101 CE1CMASTL101
C316	PCB JUMPER D0.6-P5.0	JW5.0T
C317	PCB JUMPER D0.6-P5.0	JW5.0T
C318	ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M or ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0 CE1JMASDL010 CE1JMASTL010 CE1JMASTL1R0
C319	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102

Ref.No.	Description	Part No.
C320	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C321	FILM CAP.(P) 0.015μF/50V J or	CMA1JJS00153
	FILM CAP.(P) 0.015μF/50V J or	CA1J153MS029
	FILM CAP.(P) 0.015μF/50V J TV	CMB1JJS00153
C322	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C323	ELECTROLYTIC CAP. 4.7μF/35V M or	CE1GMASDL4R7
	ELECTROLYTIC CAP. 4.7μF/35V M	CE1GMASTL4R7
C325	ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C326	FILM CAP.(P) 0.047μF/50V J or	CMA1JJS00473
	FILM CAP.(P) 0.047μF/50V J or	CA1J473MS029
	FILM CAP.(P) 0.047μF/50V J TV	CMB1JJS00473
C327	ELECTROLYTIC CAP. 2.2μF/50V M LL or	CE1JMASLL2R2
	ELECTROLYTIC CAP. 2.2μF/50V LL	CE1JMASLH2R2
C328	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C329	CERAMIC CAP.(AX) X M 3300pF/16V	CCA1CMT0X332
C330	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C331	ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C332	CHIP CERAMIC CAP. B K 680pF/50V	CHD1JKB0B681
C333	ELECTROLYTIC CAP. 0.47μF/50V M or	CE1JMASDLR47
	ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASTLR47
C336	CHIP CERAMIC CAP. B K 0.022μF/50V or	CHD1JKB0B223
	CHIP CERAMIC CAP. B K 0.022μF/25V	CHD1EKB0B223
C337	ELECTROLYTIC CAP. 4.7μF/50V M or	CE1JMASDL4R7
	ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASTL4R7
C338	FILM CAP.(P) 0.047μF/50V J or	CMA1JJS00473
	FILM CAP.(P) 0.047μF/50V J or	CA1J473MS029
	FILM CAP.(P) 0.047μF/50V J TV	CMB1JJS00473
C394	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C410	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C411	ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMASSL221
C412	CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C413	CERAMIC CAP.(AX) B K 390pF/50V	CCA1JKTOB391
C414	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C416	CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJBCH181
C417	CERAMIC CAP.(AX) SL J 22pF/50V	CCA1JITSL220
C418	ELECTROLYTIC CAP. 0.1μF/50V M H7 or	CE1JMASSL0R1
	ELECTROLYTIC CAP. 0.1μF/50V M H7	CE1JMASSLR10
C419	ELECTROLYTIC CAP. 0.1μF/50V M H7 or	CE1JMASSL0R1
	ELECTROLYTIC CAP. 0.1μF/50V M H7	CE1JMASSLR10
C420	ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMASSL220
C421	ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMASSL4R7
C423	ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMASSL4R7
C424	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C425	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010

Ref.No.	Description	Part No.
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C426	ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMASSL220
C427	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C428	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C429	ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASSL470
C430	CERAMIC CAP.(AX) Y N 0.022μF/6V	CCA0KNT0Y223
C431	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C434	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C435	ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMASSL2R2
C436	CERAMIC CAP.(AX) XM 3900pF/16V	CCA1CMT0X392
C438	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C439	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C440	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C441	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C442	CHIP CERAMIC CAP. F Z 0.047μF/50V	CHD1JZB0F473
C443	CHIP CERAMIC CAP. F Z 0.047μF/50V	CHD1JZB0F473
C444	ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMASSL220
C445	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C446	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C447	CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C448	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C492	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C628	ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C629	ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C630	ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C631	ELECTROLYTIC CAP. 220μF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220μF/6.3V M	CE0KMASTL221
C634	ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C635	ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C801	ELECTROLYTIC CAP. 330μF/16V M or	CE1CMZPDL331
	ELECTROLYTIC CAP. 330μF/16V M or	CE1CMZZTL331
	ELECTROLYTIC CAP. 330μF/16V M	CE1CMZPTL331
C802	ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C803	ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMASSL4R7
C804	ELECTROLYTIC CAP. 0.22μF/50V M or	CE1JMASDLR22
	ELECTROLYTIC CAP. 0.22μF/50V M	CE1JMASTLR22
C805	CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C806	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C853	CHIP CERAMIC CAP. F Z 0.1μF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1μF/25V	CHD1EZB0F104
C854	ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMASSL220
C856	CHIP CERAMIC CAP. F Z 0.1μF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1μF/25V	CHD1EZB0F104
C857	ELECTROLYTIC CAP. 33μF/6.3V M H7	CE0KMASSL330
C858	ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMASSL4R7
C859	CHIP CERAMIC CAP. F Z 0.1μF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1μF/25V	CHD1EZB0F104
C860	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102

Ref.No.	Description	Part No.
C862	CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C863	ELECTROLYTIC CAP. 10μF/35V M H7	CE1GMASL100
C864	ELECTROLYTIC CAP. 10μF/35V M H7	CE1GMASL100
C865	CHIP CERAMIC CAP. B K 820pF/50V	CHD1JKB0B821
C866	CERAMIC CAP.(AX) X M 2700pF/16V	CCA1CMT0X272
C872	ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASSL470
C873	ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C874	CERAMIC CAP. B K 470pF/100V or	CCD2AKS0B471
	CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C875	FILM CAP.(P) 0.018μF/50V J or	CA1J183MS029
	FILM CAP.(P) 0.018μF/100V J or	CMA2AJS00183
	FILM CAP.(P) 0.018μF/100V J TV	CMB2AJS00183
CONNECTORS		
CN201	CONNECTOR, 8P TMC-J08P-A2 or	J3TMA08TG004
	CONNECTOR, 8P TMC-J08P-A1	J3TMA08TG002
CN202	FE CONNECTOR, TOP 5P 05FE-BT-VK-N	JCFEJ05JG001
CN301	CONNECTOR BASE 4P TUC-P04P-B1	J3TUA04TG001
CN302	CONNECTOR BASE, 7P TUC-P07P-B1	J3TUA07TG001
CN303	CONNECTOR BASE, 5P TUC-P05P-B1	J3TUA05TG001
CN402	FE CONNECTOR, TOP 9P 09FE-BT-VK-N	JCFEJ09JG001
CN403	CABLE CONNECTOR, 2P TMC-E02X-A1	JCTMC02TG001
CN404	FE CONNECTOR, TOP 4P 04FE-BT-VK-N	JCFEJ04JG001
CN603	CONNECTOR BASE 15P TUC-P15P-B1	J3TUA15TG001
CN801	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
	STRAIGHT PIN HEADER, 2P 173981-2	1770258
CN991	STRAIGHT PIN HEADER, 2P IL-S-2P-S2T2-EF	1740764
DIODES		
D001	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D002	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
D003	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
D201	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
D203	LED SIR-563ST3F P or	QPQPS1R563ST
	LED SIR-563ST3F Q	QPQQS1R563ST
D204	LED LTL-4214M1 or	NPQZLTL4214M
	LED(RED)L-FORMING LT1814G-81-FL or	NP4Z0LT1814G
	LED L-53HT or	NP4Z00L53HT
	LED LAMP 333HT/F45-50K or	NPWK333HTF45
	LED LAMP 333HT/F45-50L or	NPWL333HTF45
	LED LAMP 333HT/F45-50M	NPWM333HTF45
D226	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D280	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D281	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D282	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D301	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
D303	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
D304	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D305	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D306	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D307	ZENER DIODE MTZJT-778.2A	QDTA0MTZJ8R2
D308	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148

Ref.No.	Description	Part No.
	DIODE 1SS176TPA7	1SS176T
D309	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D312	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D313	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D316	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D401	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D402	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D403	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D630▲	ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D631	ZENER DIODE MTZJT-776.8A	QDTA0MTZJ6R8
D632	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D633	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D638▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D640▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D801▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D805	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D806	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
ICs		
IC201▲	MICRO COMPUTER 16BIT M37760M8H8B1GP or	QSZAA0RMB034
▲	MICRO COMPUTER 16BIT M37760M8H8C1GP	QSZAB0RMB034
IC202	IC:MEMORY BR24C01AF-W or	QSMBA0SRM002
	IC:MEMORY AT24C01A-10SC or	NSMMA0SAZ011
	IC:(EEPROM) M24C01-MN6 or	NSMMA0SS027
	IC:MEMORY BR24C01AF	QSMMA0SRM002
IC281▲	IC BD6655FP	QSZAA0SRM001
IC301▲	IC:CHROMA/IF 1 CHIP M61206FP-61	QSZAB0RMB011
IC401	IC:Y/C/A LA71091M or	QSZBA0RSY012
	IC:Y/C/A LA71090M	QSZBA0RSY011
IC602▲	VOLTAGE REGULATOR KIA7805API or	NSBBA0SJY011
▲	IC:VOLTAGE REGULATOR AN7805F	AN7805F
IC801	AUDIO AMP LA4524L	QSBLA0SSY087
COILS		

Ref.No.	Description	Part No.
L001	PCB JUMPER D0.6-P5.0	JW5.0T
L201	PCB JUMPER D0.6-P5.0	JW5.0T
L202	INDUCTOR 0.10μH-K-26T	LLAXKATTUR10
L281	PCB JUMPER D0.6-P5.0	JW5.0T
L301	PCB JUMPER D0.6-P5.0	JW5.0T
L302	PCB JUMPER D0.6-P5.0	JW5.0T
L304	INDUCTOR 3.3μH-J-26T or	LLAXJATTU3R3
	INDUCTOR 3.3μH-K-26T	LLAXKDTKA3R3
L305	INDUCTOR 10μH-J-26T or	LLAXJATTU100
	INDUCTOR 10μH-K-26T	LLAXKDTKA100
L306	PCB JUMPER D0.6-P5.0	JW5.0T
L307	INDUCTOR 0.82μH-J-26T or	LLAXJATTUR82
	INDUCTOR 0.82μH-M-26T	LLAXMDTKAR82
L402	INDUCTOR 22μH-J-26T or	LLAXJATTU220
	INDUCTOR 22μH-K-26T	LLAXKDTKA220
L403	PCB JUMPER D0.6-P10.0	JW10.0T
L404	CHOKO COIL 47μH-K	LLBD00PKV007
L405	PCB JUMPER D0.6-P5.0	JW5.0T
L871	PCB JUMPER D0.6-P5.0	JW5.0T
L872	INDUCTOR 47μH-K-5FT or	LLARKBSTU470
	INDUCTOR 47μH-K-5FT	LLARKDSKA470
TRANSISTORS		
Q201	PHOTO TRANSISTOR ST-304L-A or	QPZA00ST304L
	PHOTO TRANSISTOR ST-304L-B or	QPZB00ST304L
	PHOTO TRANSISTOR ST-304L-C	QPZC00ST304L
Q202	PHOTO TRANSISTOR ST-304L-A or	QPZA00ST304L
	PHOTO TRANSISTOR ST-304L-B or	QPZB00ST304L
	PHOTO TRANSISTOR ST-304L-C	QPZC00ST304L
Q205	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q206	PHOTO TRANSISTOR PT204-6B-12	NPVZT2046B12
Q302	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q303	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q401	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266

Ref.No.	Description	Part No.
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2) or	QQS102SA1015
	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR 2SA1175(E)	QQSE02SA1175
Q402	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2) or	QQS102SA1015
	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR 2SA1175(E)	QQSE02SA1175
Q491	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q608▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
▲	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q609▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
▲	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q611▲	TRANSISTOR 2SD400(F)	QQUF002SD400
Q801	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q871	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2) or	QQS102SA1015
	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR 2SA1175(E)	QQSE02SA1175
Q872	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q873	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q874	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q875	RES. BUILT-IN TRANSISTOR KRA103M or	NQS20KRA103M
	RES. BUILT-IN TRANSISTOR 2SA1346 or	2SA1346Z
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q991	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785

Ref.No.	Description	Part No.
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPPE
RESISTORS		
R001	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R002	PCB JUMPER D0.6-P5.0	JW5.0T
R003	PCB JUMPER D0.6-P5.0	JW5.0T
R004	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R201	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R202	CARBON RES. 1/4W G 22k Ω	RCX4GATZ0223
R203	CARBON RES. 1/4W G 470 Ω	RCX4GATZ0471
R204	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R205	CARBON RES. 1/4W G 3.6k Ω	RCX4GATZ0362
R206	CARBON RES. 1/4W G 10k Ω	RCX4GATZ0103
R207	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R208	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R209	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R210	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R211	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R212	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R213	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R214	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R215	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R216	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R217	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R218	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R219	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R220	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJB5Z0394
R221	PCB JUMPER D0.6-P5.0	JW5.0T
R222	CARBON RES. 1/4W J 270k Ω	RCX4JATZ0274
R223	CHIP RES.(1608) 1/10W J 560 Ω	RRXAJB5Z0561
R224	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R225	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R226	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R227	CARBON RES. 1/4W J 180 Ω or	RCX4JATZ0181
	CARBON RES. 1/6W J 180 Ω	RCX6JATZ0181
R229	CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
	CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R230	PCB JUMPER D0.6-P5.0	JW5.0T
R232	PCB JUMPER D0.6-P5.0	JW5.0T
R233	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R234	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJB5Z0122
R235	CHIP RES.(1608) 1/10W J 47 Ω	RRXAJB5Z0470
R236	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R237	PCB JUMPER D0.6-P5.0	JW5.0T
R238	CHIP RES.(1608) 1/10W J 470k Ω	RRXAJB5Z0474
R239	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R240	PCB JUMPER D0.6-P5.0	JW5.0T
R241	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R242	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R243	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102

Ref.No.	Description	Part No.
R244	CHIP RES.(1608) 1/10W J 1M Ω	RRXAJB5Z0105
R245	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R246	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R247	CHIP RES.(1608) 1/10W J 820 Ω	RRXAJB5Z0821
R248	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R249	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R250	CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R251	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R252	CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R253	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R254	CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R255	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R256	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R257	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R258	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R259	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R260	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R263	CHIP RES.(1608) 1/10W J 68k Ω	RRXAJB5Z0683
R264	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R267	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R269	PCB JUMPER D0.6-P5.0	JW5.0T
R270	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R272	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R273	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R274	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
R275	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R276	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R277	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R279	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R280	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R281	METAL OXIDE FILM RES. 1W J 1.2 Ω or	RN011R2DP003
	METAL OXIDE FILM RES. 1W J 1.2 Ω or	RN011R2ZU001
	METAL OXIDE FILM RES. 1W J 1.2 Ω	RN011R2KE009
R282	PCB JUMPER D0.6-P5.0	JW5.0T
R283	CHIP RES.(1608) 1/10W J 68k Ω	RRXAJB5Z0683
R284	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R285	CARBON RES. 1/4W J 0.47 Ω	RCX4JATZ0R47
R301	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R302	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R303	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R304	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R305	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R306	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R307	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R308	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R309	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R310	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R311	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R312	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R313	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102

Ref.No.	Description	Part No.
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R314	CARBON RES. 1/4W J 12 Ω or	RCX4JATZ0120
	CARBON RES. 1/6W J 12 Ω	RCX6JATZ0120
R315	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R316	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R317	CHIP RES.(1608) 1/10W J 120k Ω	RRXAJB5Z0124
R318	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R319	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R320	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R321	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R323	CARBON RES. 1/4W J 33 Ω or	RCX4JATZ0330
	CARBON RES. 1/6W J 33 Ω	RCX6JATZ0330
R324	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R329	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R330	CARBON RES. 1/4W J 10M Ω	RCX4JATZ0106
R331	PCB JUMPER D0.6-P5.0	JW5.0T
R332	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R333	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R334	CARBON RES. 1/4W J 33 Ω or	RCX4JATZ0330
	CARBON RES. 1/6W J 33 Ω	RCX6JATZ0330
R335	PCB JUMPER D0.6-P5.0	JW5.0T
R336	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R337	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R391	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R392	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R393	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R406	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R407	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R409	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R413	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R414	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R415	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R416	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R417	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R418	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R419	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R420	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R423	CHIP RES.(1608) 1/10W J 5.6M Ω	RRXAJB5Z0565
R424	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R425	CHIP RES.(1608) 1/10W J 82k Ω	RRXAJB5Z0823
R426	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R427	CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R428	CHIP RES.(1608) 1/10W J 680k Ω	RRXAJB5Z0684
R429	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R431	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R432	PCB JUMPER D0.6-P5.0	JW5.0T
R435	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R495	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R496	CARBON RES. 1/4W J 2.2M Ω	RCX4JATZ0225
R497	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R646▲	METAL OXIDE FILM RES. 1W J 47 Ω or	RN01470DP003
▲	METAL OXIDE FILM RES. 1W J 47 Ω or	RN01470ZU001

Ref.No.	Description	Part No.
▲	METAL OXIDE FILM RES. 1W J 47 Ω	RN01470KE010
R647▲	METAL OXIDE FILM RES. 1W J 47 Ω or	RN01470DP003
▲	METAL OXIDE FILM RES. 1W J 47 Ω or	RN01470ZU001
▲	METAL OXIDE FILM RES. 1W J 47 Ω	RN01470KE010
R648▲	CARBON RES. 1/2W J 5.6 Ω or	RCX2JZQZ05R6
▲	CARBON RES. 1/2W J 5.6 Ω or	RCX25R6KA013
▲	CARBON RES. 1/2W J 5.6 Ω	RCX2JZPZ05R6
R649▲	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R650▲	CARBON RES. 1/4W J 22 Ω or	RCX4JATZ0220
▲	CARBON RES. 1/6W J 22 Ω	RCX6JATZ0220
R651	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R652▲	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
▲	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R653	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R656▲	METAL OXIDE FILM RES. 2W J 6.8 Ω or	RN026R8DP004
▲	METAL OXIDE FILM RES. 2W J 6.8 Ω or	RN026R8ZU001
▲	METAL OXIDE FILM RES. 2W J 6.8 Ω	RN026R8KE010
R659	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R660	PCB JUMPER D0.6-P5.0	JW5.0T
R701	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R702	PCB JUMPER D0.6-P5.0	JW5.0T
R801▲	FIXED METAL OXIDE FILM RES. 1W J 12 Ω or	RN01JZPZ0120
▲	METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120ZU001
▲	METAL FILM RES.(STRAIGHT)1W J 12 Ω	RN01JZQZ0120
R802▲	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R803▲	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R804	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R805	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R806	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R807	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R851	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R852	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R853	CARBON RES. 1/4W J 2.2M Ω	RCX4JATZ0225
R856	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R857	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R858	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R859	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R861	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R862	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R863	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R864	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R865	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R866	CHIP RES.(1608) 1/10W J 330k Ω	RRXAJB5Z0334
R867	CHIP RES.(1608) 1/10W J 180 Ω	RRXAJB5Z0181
R868	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R869	CHIP RES.(1608) 1/10W J 910 Ω	RRXAJB5Z0911
R871	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R872	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R873	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R874	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R875	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R876	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R877	CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821

Ref.No.	Description	Part No.
R991	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R992	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R993	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R994	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJB5Z0122
SWITCHES		
SW201	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW202	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW203	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW204	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW205	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW206	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW207	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW208	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW209	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW210	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B	SST0101HH003
SW211	PUSH SWITCH SPPB610301	SSP0102AL001
SW212	ROTARY MODE SWITCH SSS-43MD or	SSR0106KB001
	ROTARY MODE SWITCH R8100212	SSR0106U3001
MISCELLANEOUS		
CF301	CERAMIC FILTER SFSRA4M50CF00-B0	FBB455PMR004
CF302	CERAMIC TRAP 4.5MHz	FBE455PMR003
JK701	RCA JACK 1P AV-8.4-9Y	JXRL010RP010
JK702	RCA JACK 1P AV-8.4-9W	JXRL010RP011
JK801	EARPHONE JACK EX341BLB-1	JYSL030EXC01
JW001	PCB JUMPER D0.6-P5.0	JW5.0T
JW002	PCB JUMPER D0.6-P5.0	JW5.0T
JW003	PCB JUMPER D0.6-P5.0	JW5.0T
JW022	PCB JUMPER D0.6-P5.0	JW5.0T
JW051	PCB JUMPER D0.6-P7.5	JW7.5T
JW052	PCB JUMPER D0.6-P15.0	JW15.0T
RS201	REMOCON RECEIVE UNIT PIC-37042SR or	USESJRSKK034
	REMOCON RECEIVE UNIT PIC-26042SR-2	USESJRSKK032
SF001	SAW FILTER SAFGP45M7VHEZM0B03 or	FBB456PMR005
	SAW FILTER SAFGP45M7VHBZL2B03	FBB456PMR004
SN991	DEW SENSOR EYHS-10R4	PCZHUMZMS004
TB21	BUSH, LED(F) H3700UD	0VM409508
TB3	HEAD SHIELD T5200UA	0EM301417
TB5	HOLDER, SENSOR(2) H5700UD	0VM304011
TU001	TUNER B8095AP or	UTUNNTUSP018
	TUNER TEDH9-300A	UTUNNTUAL025

Ref.No.	Description	Part No.
TU001▲	TUNER UNIT B8055AR	UTUNNTUSP014
X201	XTAL 32kHz(10PPM) or	181 1351
	XTAL 32.768kHz or	FXB323LDS002
	XTAL 32kHz(10PPM) or	181 1350
	XTAL 32.768kHz(20PPM) or	FXC323LCT001
	XTAL 32.768kHz(20PPM)	FXC323LDS002
X202	XTAL HC-49/U 10.6MHz or	FXD106LLN001
	XTAL AT49-10.6 or	FXD106LDS002
	XTAL :10.6MHz S8562	FXD106LCT001
X301	XTAL 3.579545 MHz	FXD355LLN003
X401	XTAL 3.579545MHz or	FXC355LLN001
	XTAL 3.579545MHz	181 1389
Z7	SCOTCH TAPE	-----

MUT CBA

Ref.No.	Description	Part No.
	MUT PCB	0ESA03997
	Consists of the following	
	H.V. CBA (MUT-A)	-----
	CRT CBA (MUT-B)	-----

H.V. CBA

Ref.No.	Description	Part No.
	H.V. CBA (MUT-A)	-----
	Consists of the following	
CAPACITORS		
C552	MYLAR CAP. 0.22μF/50V J or	CMA1JJS00224
	FILM CAP.(P) 0.22μF/50V J or	CA1J224MS029
	FILM CAP.(P) 0.22μF/50V J TV	CMB1JJS00224
C553	ELECTROLYTIC CAP. 2.2μF/50V M LL or	CE1JMASLL2R2
	ELECTROLYTIC CAP. 2.2μF/50V LL	CE1JMASLH2R2
C555	ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C556	ELECTROLYTIC CAP. 1000μF/25V M or	CE1EMZPL102
	ELECTROLYTIC CAP. 1000μF/25V M or	CE1EMZTL102
	ELECTROLYTIC CAP. 1000μF/25V M	CE1EMZPTL102
C558	CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C559	ELECTROLYTIC CAP. 330μF/35V M or	CE1GMASDL331
	ELECTROLYTIC CAP. 330μF/35V M or	CE1GMAUTL331
	ELECTROLYTIC CAP. 330μF/35V M	CE1GMASTL331
C560	FILM CAP.(P) 0.015μF/50V J or	CMA1JJS00153
	FILM CAP.(P) 0.015μF/50V J or	CA1J153MS029
	FILM CAP.(P) 0.015μF/50V J TV	CMB1JJS00153
C572▲	P.P. CAP 0.22μF/200V J or	CA2D224VC012
▲	PP CAP. 0.22μF/200V J or	CT2E224MS041
▲	METALLIZED FILM CAP. 0.22μF/200V J	CT2D224F7001
C574	ELECTROLYTIC CAP. 4.7μF/250V M or	CE2EMASDL4R7
	ELECTROLYTIC CAP. 4.7μF/250V M	CE2EMASTL4R7
C577	FILM CAP.(P) 0.01μF/50V J or	CMA1JJS00103
	FILM CAP.(P) 0.01μF/50V J or	CA1J103MS029
	FILM CAP.(P) 0.01μF/50V J TV	CMB1JJS00103
C578	ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C580▲	P.P.CAP 0.0068μF/1.6KV J or	CA3C682VC011
▲	PP CAP. 0.0068μF/1.6KV J or	CT3C682MS039
▲	METALLIZED FILM CAP. 0.0068μF/1.6KV J or	CT3C682F7002
▲	PP CAP. 0.0068μF/1.6KV J	CBH3CJQ00682
C581▲	CERAMIC CAP. BN 820pF/2KV or	CCD3DKA0B821

Ref.No.	Description	Part No.
▲	CERAMIC CAP. LB 820pF/2KV or	CA3D821KG004
▲	CERAMIC CAP. 820pF/2KV	CA3D821PAN04
C584▲	ELECTROLYTIC CAP. 1μF/160V M or	CE2CMASDL1R0
▲	ELECTROLYTIC CAP. 1μF/160V M or	CE2CMASDL1010
▲	ELECTROLYTIC CAP. 1μF/160V M	CE2CMASDL1R0
C591▲	ELECTROLYTIC CAP. 1μF/50V M H7 or	CE1JMASSL010
▲	ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C592▲	ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
▲	ELECTROLYTIC CAP. 47μF/35V M	CE1GMASDL470
C594	ELECTROLYTIC CAP. 10μF/160V M or	CE2CMASDL100
	ELECTROLYTIC CAP. 10μF/160V M	CE2CMASDL100
CONNECTORS		
CN571	CONNECTOR BASE, 5P TV-50P-05-V3 or	J3TVC05TG002
	CONNECTOR BASE, 5P RTB-1.5-5P	J3RTC05JG001
DIODES		
D552	DIODE 1N5397-B or	NDLZ001N5397
	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D571▲	DIODE FR154 or	NDLZ000FR154
▲	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D572▲	DIODE FR104-B or	NDLZ000FR104
▲	RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
▲	RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
D573	PCB JUMPER D0.6-P5.0	JW5.0T
D584▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D585	ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D591▲	ZENER DIODE MTZJT-7736B	QDTB00MTZJ36
D593▲	PCB JUMPER D0.6-P5.0	JW5.0T
D595	ZENER DIODE MTZJT-7720B	QDTB00MTZJ20
D596▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D597▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D598▲	DIODE FR104-B or	NDLZ000FR104
▲	RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
▲	RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
ICS		
IC551▲	VERTICAL OUTPUT IC AN5522 or	QSZBA0SMS002
▲	VERTICAL OUTPUT IC LA78040A	QSBBA0SSY003
COILS		
L505	CHOKER COIL 47μH-K	LLBD00PKV007
L572▲	CHOKER COIL 47μH-K	LLBD00PKV007
TRANSISTORS		
Q571▲	TRANSISTOR 2SD2627LS-FEC-YB11	QQZZ02SD2627
Q572	TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q591▲	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
▲	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
▲	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
▲	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
▲	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
▲	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
▲	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
▲	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
▲	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
▲	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
RESISTORS		
R542▲	PCB JUMPER D0.6-P12.5	JW12.5T

Ref.No.	Description	Part No.
R544▲	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R551	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R552▲	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R556	CARBON RES. 1/4W J 4.7 Ω or	RCX4JATZ04R7
	CARBON RES. 1/6W J 4.7 Ω	RCX6JATZ04R7
R557	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R558	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R559	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R560	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R561	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R562	CARBON RES. 1/4W J 5.6 Ω or	RCX4JATZ05R6
	CARBON RES. 1/6W J 5.6 Ω	RCX6JATZ05R6
R563	CARBON RES. 1/4W J 5.6 Ω or	RCX4JATZ05R6
	CARBON RES. 1/6W J 5.6 Ω	RCX6JATZ05R6
R565▲	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
▲	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R566▲	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
▲	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R568▲	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R570▲	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
▲	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R573	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R574▲	METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102ZU001
▲	METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102DP004
▲	METAL OXIDE FILM RES. 2W J 1k Ω	RN02102KE010
R575▲	METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102ZU001
▲	METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102DP004
▲	METAL OXIDE FILM RES. 2W J 1k Ω	RN02102KE010
R576	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R577	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R578	PCB JUMPER D0.6-P5.0	JW5.0T
R580▲	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
▲	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R581	PCB JUMPER D0.6-P5.0	JW5.0T
R583▲	METAL OXIDE FILM RES. 2W J 5.6 Ω or	RN025R6DP004
▲	METAL OXIDE FILM RES. 2W J 5.6 Ω or	RN025R6ZU001
▲	METAL OXIDE FILM RES. 2W J 5.6 Ω	RN025R6KE010
R584▲	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
▲	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R585	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R586	PCB JUMPER D0.6-P5.0	JW5.0T
R587▲	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R588	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R589▲	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
▲	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R591▲	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R592▲	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R593▲	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R594▲	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R596	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R597▲	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R598▲	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R599▲	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
MISCELLANEOUS		
BC571	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
CL502A	LEAD WIRE 6P 200MM	WX1T4100-001

Ref.No.	Description	Part No.
CL503A	LEAD WIRE 7P 310MM	WX1T4200-102
DB1▲	H/V PCB HOLDER T4200UA	OEM301432
DB2	13V H/V HEAT SINK(PDX) T5100UA	OEM405399
DL1	SCREW, P-TIGHT 3X10 BIND HEAD	GBUP3100
DL2	B-TITE SCREW 3X8 BIND + CHROME	GBMB3080
T571▲	FLYBACK TRANS BSC21-2627S	LTF00CPS2033
T572	HORIZONTAL DRIVE TRANS LP2-004	LTH00CPA5004
Z6	MODEL NO. LABEL	-----

CRT CBA

Ref.No.	Description	Part No.
	CRT CBA (MUT-B) Consists of the following	-----
CAPACITORS		
C501	CERAMIC CAP.(AX) B K 330pF/50V	CCA1JKT0B331
C502	CERAMIC CAP.(AX) B K 330pF/50V	CCA1JKT0B331
C503	CERAMIC CAP.(AX) B K 330pF/50V	CCA1JKT0B331
C510	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV or	CA3D102MR030
	CERAMIC CAP. B K 1000pF/2KV	CCD3DKD0B102
CONNECTORS		
CN501	PIN CONNECTOR 005P-5100 or	JTEA001TG001
	CONNECTOR PIN, 1P LV or	1700576
	CONNECTOR PIN, 1P RT-01N-2.3A	1730688
COIL		
L501▲	PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS		
Q501	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR 2SC3468(E)-AE or	QQSE02SC3468
	TRANSISTOR 2SC3468(D)-AE or	QQSD02SC3468
	TRANSISTOR 2SC2271(D)-AEMP or	2SC2271DZ
	TRANSISTOR 2SC2271(E)-AE or	QQSE02SC2271
	TRANSISTOR KTC3207	NQSZ0KTC3207
Q502	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR 2SC3468(E)-AE or	QQSE02SC3468
	TRANSISTOR 2SC3468(D)-AE or	QQSD02SC3468
	TRANSISTOR 2SC2271(D)-AEMP or	2SC2271DZ
	TRANSISTOR 2SC2271(E)-AE or	QQSE02SC2271
	TRANSISTOR KTC3207	NQSZ0KTC3207
Q503	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR 2SC3468(E)-AE or	QQSE02SC3468
	TRANSISTOR 2SC3468(D)-AE or	QQSD02SC3468
	TRANSISTOR 2SC2271(D)-AEMP or	2SC2271DZ
	TRANSISTOR 2SC2271(E)-AE or	QQSE02SC2271
	TRANSISTOR KTC3207	NQSZ0KTC3207
RESISTORS		
R501▲	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153ZU001
▲	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
▲	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153KE010
R502▲	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153ZU001
▲	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
▲	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153KE010
R503▲	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153ZU001
▲	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
▲	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153KE010
R504	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R505	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R506	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R507	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152

Ref.No.	Description	Part No.
R508	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R509	PCB JUMPER D0.6-P5.0	JW5.0T
R510	PCB JUMPER D0.6-P5.0	JW5.0T
R511	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R512	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R513	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R514	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R515	PCB JUMPER D0.6-P5.0	JW5.0T
R516	CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
	CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R517	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
R518	CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
	CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R519	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
R520	CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
	CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R521	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
MISCELLANEOUS		
CL501A	LEAD WIRE 3P 230/BLA/AWG#26#2468	WX1T4000-106
JK501	CRT SOCKET ISMS02S	JSCC220PK003

POWER SUPPLY CBA

Ref.No.	Description	Part No.
	POWER SUPPLY CBA Consists of the following	0ESA04003
CAPACITORS		
C1601▲	METALLIZED FILM CAP. 0.1μF/250V or	CT2E104MS037
▲	FILM CAP.(MP) 0.1μF/250V K or	CT2E104DC011
▲	FILM CAP.(MP) 0.1μF/250V M	CT2E104DC009
C1603	CERAMIC CAP. F Z 0.01μF/500V or	CCD2JZD0F103
	CERAMIC CAP. 0.01μF/AC250V	CCD2EZA0F103
C1604	CERAMIC CAP. F Z 0.01μF/500V or	CCD2JZD0F103
	CERAMIC CAP. 0.01μF/AC250V	CCD2EZA0F103
C1605	CERAMIC CAP. F Z 0.01μF/500V or	CCD2JZD0F103
	CERAMIC CAP. 0.01μF/AC250V	CCD2EZA0F103
C1606	CERAMIC CAP. F Z 0.01μF/500V or	CCD2JZD0F103
	CERAMIC CAP. 0.01μF/AC250V	CCD2EZA0F103
C1607▲	ELECTROLYTIC CAPACITOR 150μF/200V or	CA2D151S6012
▲	ALUMINIUM ELECTROLYTIC CAP150μF/200V	CA2D151NC088
C1608	CERAMIC CAP. BN 680pF/2KV or	CCD3DKA0B681
	CERAMIC CAP. LB 680pF/2K or	CA3D681KG004
	CERAMIC CAP. 680pF/2KV	CA3D681PAN04
C1609	FILM CAP.(P) 0.047μF/50V J or	CMA1JJS00473
	FILM CAP.(P) 0.047μF/50V J TV	CA1J473MS029
	FILM CAP.(P) 0.047μF/50V J TV	CMB1JJS00473
C1610	FILM CAP.(P) 0.033μF/50V J or	CMA1JJS00333
	FILM CAP.(P) 0.033μF/50V J or	CA1J333MS029
	FILM CAP.(P) 0.033μF/50V J TV	CMB1JJS00333
C1611	CERAMIC CAP.(AX) B K 0.0018μF/50V or	CA1J182TU011
If C1616 is 4700pF, then C1617 is PCB JUMPER.		
C1617	PCB JUMPER P10.0MM	JW10.0
C1616▲	SAFETY CAP. 4700pF/125V MX or	CCF2BMA0F472
▲	SAFETY CAP. 4700pF/250V KX or	CA2E472MR050
If C1616 is 0.01μF, then C1617 is 0.01μF.		
C1616▲	SAFETY CAP. F M 0.01μF/250V	CCG2EMP0F103
C1616▲	SAFETY CAP. TS 0.01μF/250V	CCE2EMA0F103
C1616▲	CERAMIC CAP. 0.01μF F CS	CCG2HMN0F103

Ref.No.	Description	Part No.
C1617▲	SAFETY CAP. F M 0.01μF/250V	CGG2EMPOF103
C1617▲	SAFETY CAP. TS 0.01μF/250V	CCE2EMA0F103
C1617▲	CERAMIC CAP. 0.01μF F CS	CGG2HMNOF103
C1620	ELECTROLYTIC CAP. 47μF/160V M W/F or	CE2CMZNDL470
	ELECTROLYTIC CAP. 47μF/160V M W/F	CE2CMZNTL470
C1621	CERAMIC CAP. BN 470pF/2KV or	CCD3DKA0B471
	CERAMIC CAP. LB 470pF/2KV or	CA3D471KG004
	CERAMIC CAP. 470pF/2KV	CA3D471PAN04
C1622▲	ELECTROLYTIC CAP. 470μF/35V M or	CE1GMZPDL471
▲	ELECTROLYTIC CAP. 470μF/35V M	CE1GMZZTL471
C1623▲	ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
▲	ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZZTL102
▲	ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C1624▲	ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
▲	ELECTROLYTIC CAP. 470μF/16V M	CE1CMASL471
C1625▲	ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
▲	ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZZTL102
▲	ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C1626	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C1627	CERAMIC CAP.(AX) B K 150pF/50V	CCA1JKT0B151
C1629	FILM CAP.(P) 0.018μF/50V J or	CMA1JJS00183
	FILM CAP.(P) 0.018μF/50V J or	CA1J183MS029
	FILM CAP.(P) 0.018μF/50V J TV	CMB1JJS00183
C1630	ELECTROLYTIC CAP. 4.7μF/25V M or	CE1EMASDL4R7
	ELECTROLYTIC CAP. 4.7μF/25V M	CE1EMASTL4R7
C1631	ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASL101
C1632	ELECTROLYTIC CAP. 47μF/16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/16V M	CE1CMASL470
C1634	CERAMIC CAP. YV Z 0.01μF/50V or	CCD1JZSYV103
	CERAMIC CAP. F Z 0.01μF/50V	CCD1JZS0F103
C1930	CERAMIC CAP.(AX) CH J 330pF/50V	CA1J331TU008
C1931	ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C1932	CERAMIC CAP.(AX) B K 0.0047μF/50V	CA1J472TU011
C1933	ELECTROLYTIC CAP. 10μF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASL100
C1951	ELECTROLYTIC CAP. 1000μF/25V M or	CE1EMZPDL102
	ELECTROLYTIC CAP. 1000μF/25V M or	CE1EMZZTL102
	ELECTROLYTIC CAP. 1000μF/25V M	CE1EMZPTL102
C1952	ELECTROLYTIC CAP. 3300μF/25V(PJ) or	CA1E332NC052
	ELECTROLYTIC CAP. 3300μF/25V M(KC)	CA1E332EA041
C1957	CERAMIC CAP. B K 560pF/1KV or	CCD3AKP0B561
	CERAMIC CAP. B K 560pF/1KV	CCD3AKD0B561
C1958	CERAMIC CAP. B K 560pF/1KV or	CCD3AKP0B561
	CERAMIC CAP. B K 560pF/1KV	CCD3AKD0B561
C1959	ELECTROLYTIC CAP. 100μF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100μF/160V M	CE2CMZZTL101
C1960	CERAMIC CAP. B K 1500pF/1KV or	CCD3AKP0B152
	CERAMIC CAP. B K 1500pF/1KV	CCD3AKD0B152
C1961	ELECTROLYTIC CAP. 220μF/35V M or	CE1GMASDL221
	ELECTROLYTIC CAP. 220μF/35V M or	CE1GMAUTL221
	ELECTROLYTIC CAP. 220μF/35V M	CE1GMASTL221
C1962	FILM CAP.(P) 0.0082μF/50V J or	CMA1JJS00822
	FILM CAP.(P) 0.0082μF/50V J or	CA1J822MS029
	FILM CAP.(P) 0.0082μF/50V J TV	CMB1JJS00822
C1963	CERAMIC CAP. YV Z 0.01μF/50V or	CCD1JZSYV103
	CERAMIC CAP. F Z 0.01μF/50V	CCD1JZS0F103

Ref.No.	Description	Part No.
C1964	ELECTROLYTIC CAP. 47μF/16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/16V M	CE1CMASL470
C1965	ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C1966	CERAMIC CAP.(AX) B K 0.027μF/50V	CA1J273TU011
C1967	FILM CAP.(P) 0.01μF/50V J or	CMA1JJS00103
	FILM CAP.(P) 0.01μF/50V J or	CA1J103MS029
	FILM CAP.(P) 0.01μF/50V J TV	CMB1JJS00103
C1968	CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C1969	ELECTROLYTIC CAP. 4.7μF/25V M or	CE1EMASDL4R7
	ELECTROLYTIC CAP. 4.7μF/25V M	CE1EMASTL4R7
CONNECTORS		
CN1601	CONNECTOR BASE, 2P TV-50P-02-V3 or	J3TVC02TG002
	CONNECTOR BASE, 2P RTB-1.5-2P	J3RTC02JG001
CN1604	CONNECTOR BASE, 6P TUC-P06P-B1	J3TUA06TG001
CN1953	CONNECTOR, 15P TUC-P15X-B1	JCTUS15TG001
DIODES		
D1602	PCB JUMPER D0.6-P12.5	JW12.5T
D1603▲	DIODE 1N5397-B or	NDLZ001N5397
▲	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D1604▲	DIODE 1N5397-B or	NDLZ001N5397
▲	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D1605▲	DIODE 1N5397-B or	NDLZ001N5397
▲	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D1606▲	DIODE 1N5397-B or	NDLZ001N5397
▲	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D1608▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D1609▲	ZENER DIODE MTZJT-7733C	QDTC00MTZJ33
D1610▲	ZENER DIODE MTZJT-7720C	QDTC00MTZJ20
D1611	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D1613	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1621▲	RECOVERY DIODE ERC18-04	QDZZ0ERC1804
D1622▲	DIODE FR154 or	NDLZ000FR154
▲	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D1623▲	DIODE 1ZC33	QDQZ0001ZC33
D1624▲	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
▲	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1625▲	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
▲	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1626▲	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
▲	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1627	DIODE FR104-B or	NDLZ000FR104
	RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
	RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
D1628	ZENER DIODE MTZJT-7713A	QDTA00MTZJ13
D1629	ZENER DIODE MTZJT-772.2B	QDTB0MTZJ2R2
D1630	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1631▲	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D1632▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148 or	NDTZ001N4148
▲	DIODE 1SS176TPA7	1SS176T
D1633	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T

Ref.No.	Description	Part No.
D1635	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1636	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1638	ZENER DIODE MTZJT-77.8B	QDTB0MTZJ8R2
D1639	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1640	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1641	ZENER DIODE MTZJT-77.36A	QDTA00MTZJ36
D1644	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1930	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1952▲	DIODE 1ZC18	QDQZ0001ZC18
D1955▲	FAST RECOVERY DIODE 20NFA60 or	QDAZ020NFA60
▲	FAST RECOVERY DIODE ERD38-06	QDQZ0ERD3806
D1956▲	DIODE FR154 or	NDLZ000FR154
▲	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D1957	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1958	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1959	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1960	ZENER DIODE MTZJT-77.6B	QDTB0MTZJ6R8
D1961	ZENER DIODE MTZJT-77.5B	QDTB0MTZJ5R6
D1962	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D1963	ZENER DIODE MTZJT-77.5.1A	QDTA0MTZJ5R1
D1964	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
ICS		
IC1601▲	PHOTOCOUPLER LTV-817B-F or	NPEB0LTV817F
▲	PHOTOCOUPLER LTV-817C-F or	NPEC0LTV817F
▲	PHOTO COUPLER PC817X6	QPE600PC817X
IC1951▲	IC:SWITCHING REGULATOR M62212FP	QSZBA0TMB004
COILS		
L1601▲	LINE FILTER SA-91213B or	LLBG00ZSA002
▲	LINE FILTER TLF12UA302W1R0 or	LLBG00ZTU025
▲	LINE FILTER 5.0MH 6Y075 or	LLBG00ZKT004
▲	LINE FILTER UU10.5-A	LLBG00ZY2008
L1602	PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS		
Q1601▲	MOS FET 2SK2662	QF5Z02SK2662
Q1602▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q1622▲	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
▲	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
▲	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
▲	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
▲	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE

Ref.No.	Description	Part No.
Q1623	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q1624	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q1625▲	TRANSISTOR 2SA950(O) or	Q2SA9500TPE2
▲	TRANSISTOR 2SA950(Y) or	Q2SA950YTPE2
▲	TRANSISTOR KTA1271(Y)	NQSY0KTA1271
Q1626▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
▲	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1930	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q1931	TRANSISTOR KTC3199(GR)	NQS10KTC3199
Q1932	TRANSISTOR KTA1267(GR)	NQS10KTA1267
Q1933▲	MOS FET 2SK2232 or	QF5Z02SK2232
▲	MOS FET FS30KMJ-06	QFZ0F30KMJ
Q1951	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q1952	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPE
Q1953▲	TRANSISTOR 2SA1931	QQZ02SA1931
Q1954	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015

Ref.No.	Description	Part No.
Q1955	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPPE
Q1956	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPPE
Q1957	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR 2SA1346 or	2SA1346Z
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q1958	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT or	QQSGC536NNPA
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815GR-TPE2	2SC1815GRTPPE
RESISTORS		
J1603	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R1602▲	CEMENT RES. 5W K 1.2 Ω or	RW051R2DP005
▲	CEMENT RESISTOR 5W K 1.2 Ω or	RW051R2PG001
▲	CEMENT RESISTOR SQZ05S1R2J	RW051R2Y4001
R1603▲	CARBON RES. 1/4W J 1.2M Ω	RCX4JATZ0125
R1604	CARBON RES. 1/4W J 1.2M Ω	RCX4JATZ0125
R1605	PCB JUMPER D0.6-P5.0	JW5.0T
R1606▲	METAL OXIDE FILM RES. 2W J 0.39 Ω or	RN02R39DP004
▲	METAL OXIDE FILM RES. 2W J 0.39 Ω or	RN02R39ZU001
▲	METAL OXIDE FILM RES. 2W J 0.39 Ω	RN02R39KE010
R1607	PCB JUMPER D0.6-P5.0	JW5.0T
R1608	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R1609	CARBON RES. 1/4W J 180 Ω or	RCX4JATZ0181
	CARBON RES. 1/6W J 180 Ω	RCX6JATZ0181
R1610	CARBON RES. 1/4W J 180 Ω or	RCX4JATZ0181
	CARBON RES. 1/6W J 180 Ω	RCX6JATZ0181
R1611	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1613	CARBON RES. 1/4W J 150 Ω or	RCX4JATZ0151
	CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R1614	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R1624▲	CEMENT RES. 5W J 3.3k Ω or	RW05332DP008
▲	CEMENT RES. 5W K 3.3k Ω or	RW05332PG004
▲	CEMENT RESISTOR RS-SQZ05332J	RW05332Y4004
R1625	CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
	CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R1626▲	CARBON RES. 1/4W J 270 Ω or	RCX4JATZ0271

Ref.No.	Description	Part No.
▲	CARBON RES. 1/6W J 270 Ω	RCX6JATZ0271
R1628▲	CARBON RES. 1/4W 2.2 Ω J	RCX4JATZ02R2
R1630▲	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
▲	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R1631	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R1632	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R1633▲	CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
▲	CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R1634▲	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
▲	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R1635▲	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1636▲	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1637▲	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R1638▲	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1639▲	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1640▲	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1641	CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
	CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R1642	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1643	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R1644	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1645	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1650▲	METAL OXIDE FILM RES. 2W J 680 Ω or	RN02681DP004
▲	METAL OXIDE FILM RES. 2W J 680 Ω or	RN02681ZU001
▲	METAL OXIDE FILM RES. 2W J 680 Ω	RN02681KE010
R1651	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R1652	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1655▲	METAL OXIDE FILM RES. RSS1MG6R8J or	RN016R8DP003
▲	METAL OXIDE FILM RES. 1W J 6.8 Ω or	RN016R8ZU001
▲	METAL OXIDE FILM RES. 1W J 6.8 Ω	RN016R8KE009
R1656	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1660▲	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1661	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1930	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1931▲	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1932▲	CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
▲	CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R1933▲	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
▲	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1934	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1935	CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
	CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R1936	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R1937	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1938	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R1939	CARBON RES. 1/4W J 5.6 Ω or	RCX4JATZ05R6
	CARBON RES. 1/6W J 5.6 Ω	RCX6JATZ05R6
R1940	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1953▲	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R1954	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1955	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1956	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1957▲	METAL OXIDE FILM RES. 2W J 150 Ω or	RN02151DP004
▲	METAL OXIDE FILM RES. 2W J 150 Ω or	RN02151ZU001
▲	METAL OXIDE FILM RES. 2W J 150 Ω	RN02151KE010
R1958▲	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1959▲	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1960	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1961▲	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102

Ref.No.	Description	Part No.
▲	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1962▲	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
▲	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R1963	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R1965	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1966	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1967	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R1968	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1969	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1970	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1971	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1972	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1973	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1974▲	CEMENT RES. 5W K 5.6 Ω or	RW055R6DP007
▲	CEMENT RES. 5W K 5.6 Ω or	RW055R6PG004
▲	CEMENT RESISTOR RS-SQZ055R6J	RW055R6Y4004
R1976▲	METAL OXIDE FILM RES. 1W J 33 Ω or	RN01330DP003
▲	METAL OXIDE FILM RES. 1W J 33 Ω or	RN01330ZU001
▲	METAL OXIDE FILM RES. 1W J 33 Ω	RN01330KE009
R1977	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1978	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1979	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
MISCELLANEOUS		
BC1601	PCB JUMPER D0.6-P5.0	JW5.0T
BC1602	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1603	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1620	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1621	PCB JUMPER D0.6-P5.0	JW5.0T
BC1951	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1952	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1954	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CL1951	LEAD WIRE 15P(7+8) 200MM	WX1T4100-003
F1601▲	FUSE 4A/125V 237 TYPE or	PAGJ20CAG402
▲	FUSE STC4A125V U/CT or	PAGE20CW3402
▲	FUSE 4.00A/125V or	PAGU20CAG402
▲	FUSE 51MS040L	PAFC20CHV402
F1951▲	FUSE 6A/125V 237 TYPE or	PAGJ20CAG602
▲	FUSE 6.00A/125V or	PAGU20CAG602
▲	FUSE 51MS060L	PAFC20CHV602
FH1601	FUSE HOLDER MSF-015	XH01Z00LY001
FH1601	FUSE HOLDER FH-V-03078	XH01Z00DK001
▲		
FH1602	FUSE HOLDER MSF-015	XH01Z00LY001
FH1602	FUSE HOLDER FH-V-03078	XH01Z00DK001
▲		
FH1951	FUSE HOLDER MSF-015	XH01Z00LY001
FH1951	FUSE HOLDER FH-V-03078	XH01Z00DK001
▲		
FH1952	FUSE HOLDER MSF-015	XH01Z00LY001
FH1952	FUSE HOLDER FH-V-03078	XH01Z00DK001
▲		
JK1601▲	AC INLET CCT9302-0201M or	JTDC0P0SR001
▲	AC INLET HSC0555-010010 or	JTDC0P0HD001
▲	AC INLET YKE31-0120	JTDC0P0JC001
JK1951▲	DC JACK	1630382
PB1	POWER PCB HOLDER T4200UA	0EM000498

Ref.No.	Description	Part No.
PB2	BOTTOM SHIELD(AC) T4000UA	0EM404771
PB3	BOTTOM SHIELD(DC) T4000UA	0EM404775
PB4	9V POW HEAT SINK PFF ASSEMBLY T4200UA	0EM406108
PB5	HEAT SINK(EP) T4200UA	0EM406090
PB8	TOOTHED LOCK WASHER M3XD8XT:0.5	WBM3085
PL1	SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
PL2	B-TITE SCREW 3X8 BIND + CHROME or	GBMB3080
	B-TITE SCREW 3X8 BIND + CHROME	GBMB3080
PL4	SCREW, B-TIGHT 3X10 WASHER HEAD	GCMB3100
PS1601	THERMISTOR ZPB45BL7R0A	QNZZ45BL7R0A
▲		
SA1601	SURGE ABSORBER JVR-07N471K or	NVQZVR07N471
▲		
▲	SURGE ABSORBER CNR-10D471K or	NVQZR10D471K
▲	SURGE ABSORBER CNR-07D471K or	NVQZR07D471K
▲	SURGE ABSORBER PVR-07D471KB	NVQZ07D471KB
SG1602	GAP. FNR-G3.10D	FAZ000LD6005
▲		
T1601▲	SWITCHING TRANS KD-00704	LTT00CPKT068
T1951▲	SWITCHING TRANS KD-00705	LTT00ZPKT069
VR1620	CARBON P.O.T. 10k Ω B or	VRCB103KA011
▲		
▲	CARBON P.O.T. 10k Ω B	VRCB103HH014
VR1951	CARBON P.O.T. 20k Ω B or	VRCB203KA011
▲		
▲	CARBON P.O.T. 20k Ω B	VRCB203HH014

Junction A CBA

Ref.No.	Description	Part No.
	Junction A CBA Consists of the following	-----
CN503	CONNECTOR, 7P TUC-P07X-B1	JCTUS07TG001
CN504	CONNECTOR 4P TUC-P04X-B1	JCTUS04TG001
CL504A	LEAD WIRE 4P 250MM	WX1T4200-101

Junction B CBA

Ref.No.	Description	Part No.
	Junction B CBA Consists of the following	-----
CN502▲	CONNECTOR, 6P TUC-P06X-B1	JCTUS06TG001

DECK PARTS LIST

Ref. No.	Description	Part No.
B2	CYLINDER ASSEMBLY MK10 NTSC 2HD SQPB	N1228CYL
B3	LOADING MOTOR ASSEMBLY MK10	0VSA11013
B8	PULLEY ASSEMBLY MK10	0VSA11021
B9	MOVING GUIDE S PREPARATION MK10	0VSA11002
B10	MOVING GUIDE T PREPARATION MK10	0VSA11004
B11	LOADING ARM T ASSEMBLY MK10	0VSA11001
B12	LOADING ARM S ASSEMBLY MK10	0VSA11019
B27	TENSION LEVER SUB ASSEMBLY MK10	0VSA11016
B31	AC HEAD ASSEMBLY MK10(TVCR)	0VSA11717
B35	TAPE GUIDE ASSEMBLY MK10	0VSA11007
B37	CAPSTAN MOTOR 288/CCM001 or	N9640CML
	CAPSTAN MOTOR 288/CCM002	N9650CML
B52	CAP BELT MK10	0VM411138
B73	FE HEAD(MK10) HVFHP0044A or	DHVEC01AL006
	FE HEAD ASSEMBLY MK10 or	N9741FEL
	FE HEAD(MK10) MH-131SF10 or	DHVEC01Z0004
	FE HEAD(MK9) MH-131SF9	DHVEC01Z0002
B74	PRISM MK10	0VM202870
B121	WORM MK10	0VM411094
B122	WORM SHAFT MK10 or	0VM411650
	WORM SHAFT(C) MK10	0VM411651
B126	PULLEY MK10	0VM411093
B133	IDLER ASSEMBLY(90) MK10	0VSA12063
B148	TG CAP MK6	0VM407664C
B300	C DRIVE LEVER R MK10	0VM304409
B303	F DOOR OPENER A MK10	0VM304553
B313	C.DRIVE SPRING MK10	0VM411111
B319	CASSETTE SPRING MK9	0VM410571
B354	SLIDER R MK10	0VM100913
B355	SLIDER L MK10	0VM202867
B401	VH CONNECTOR 4AJ MK10 JST	0VM304541
B402	VH CONNECTOR 4BJ MK10 JST	0VM411464
B403	ACH CONNECTOR AN(9P) MK9	0VM303991
B404	ACH CONNECTOR 9B MK10	0VM411471
B410	PINCH ARM(A) ASSEMBLY MK10	0VSA10995
B411	PINCH SPRING MK10	0VM411092
B414	M BRAKE S ASSEMBLY MK10	0VSA10999
B416	M BRAKE T ASSEMBLY MK10	0VSA11000
B417	TENSION SPG B MK10	0VM411819
B425	LOCK LEVER SPRING MK10	0VM411110
B426	KICK PULLEY MK10	0VM411095
B472	SLIDER R ASSEMBLY MK10	0VSA11288
B482	CASSETTE PLATE MK10	0VM202869
B483	LOCK LEVER MK10	0VM411109D
B487	BAND BRAKE MK10	0VM304416B
B488	MODE LEVER MK10	0VM100918H
B491	CAM GEAR(A) MK10 or	0VM100914
	CAM GEAR(A) MK10	0VM101003
B492	MODE GEAR MK10	0VM304402J
B494	DOOR OPENER B MK10	0VM304398
B499	T LEVER HOLDER MK10	0VM304419
B501	WORM HOLDER MK10	0VM304397
B502	CAM GEAR(B) MK10	0VM304403
B505	P.S.W F 6*2.55*0.5	0VM402629A
B507	REEL WASHER MK9 5*2.1*0.5	0VM410058
B508	S BRAKE SPRING MK10	0VM411121

Ref. No.	Description	Part No.
B510	P.S.W F 6*2.55*0.5	0VM402629A
B512	REEL WASHER MK9 5*2.1*0.5	0VM410058
B513	PSCW(752605) MK10	0VM411516
B514	SCREW RACK MK10	0VM411535
B516	REEL WASHER MK9 5*2.1*0.5	0VM410058
B518	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B520	T BRAKE SPRING MK10	0VM411123
B521	SOFT SPRING MK10	0VM411122A
B522	TG POST ASSEMBLY MK10	0VSA11012
B523	FIRST POST ASSEMBLY MK9	0VSA10062
B524	MOTOR PCB ASSEMBLY(M) MK10	0VSA11194
B525	LDG BELT MK10	0VM411097
B550	TAPE GUIDE ARM SPRING MK6	0VM407704E
B551	FF ARM MK10	0VM304424
B552	ADJUST SPRING MK10	0VM411697
B555	RACK ASSEMBLY MK10	0VSA11009
B556	STANDARD POST MK9	0VM410055C
B557	MOTOR PULLEY U5	0VM403205A
B558	LOADING MOTOR M31E-1 R14 7215	MMDZB12MM001
B559	CLUTCH ASSEMBLY MK10	0VSA11018
B560	KICK SPRING MK10	0VM411475A
B561	F DOOR SPRING MK10	0VM411430
B562	C DRIVE LEVER L MK10	0VM304408
B563	SLIDER SHAFT MK10	0VM411112
B564	M GEAR MK10	0VM411136E
B565	SENSOR GEAR MK10	0VM411134
B566	FF ARM HOLDER MK10	0VM304448
B567	PINCH ARM(B) MK10	0VM304396
B568	BT ARM MK10	0VM304417H
B569	CAM HOLDER MK10	0VM304404G
B570	CAM RACK SPG MK10	0VM411102
B571	P.S.W F 6*2.55*0.5	0VM402629A
B572	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573	REEL S MK10	0VM202871
B574	REEL T MK10	0VM202872
B575	RADIATOR PLATE MK10	0VM411330
B576	SLIDE HOLDER(S) MK10	0VM411728
B577	SLIDE HOLDER(T) MK10	0VM411729
L1051	SCREW, S-TIGHT M2.6X6 PAN HEAD + or	GPMS9060
	SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151	SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1341	SCREW, P-TIGHT M2.6X6 BIND HEAD+	GBMP9060
L1406	AC HEAD SCREW MK9	0VM410964
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1460	SCREW M2.6X6 PAN HEAD +	SPM39060
L1461	SCREW, P-TIGHT M2.6X6 WASHER HEAD+	GCMP9060
L1463	SCREW, S-TIGHT M2.6X4 BIND HEAD+	GBMS9040
L1466	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1469	SCREW, S-TIGHT M2.6X6 PAN HEAD +	GPMS9060
L1471	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1480	SCREW, S-TIGHT M2.6X6 PAN HEAD +	GPMS9060
L1482	SCREW, B-TIGHT M2.3X4 BIND HEAD+	GBMBY040
L1483	SCREW, P-TIGHT M2.6X8 BIND HEAD+ or	GBMP9080
	SCREW PRISM MK7	0VM409038

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