FUNAI

SERVICE MANUAL

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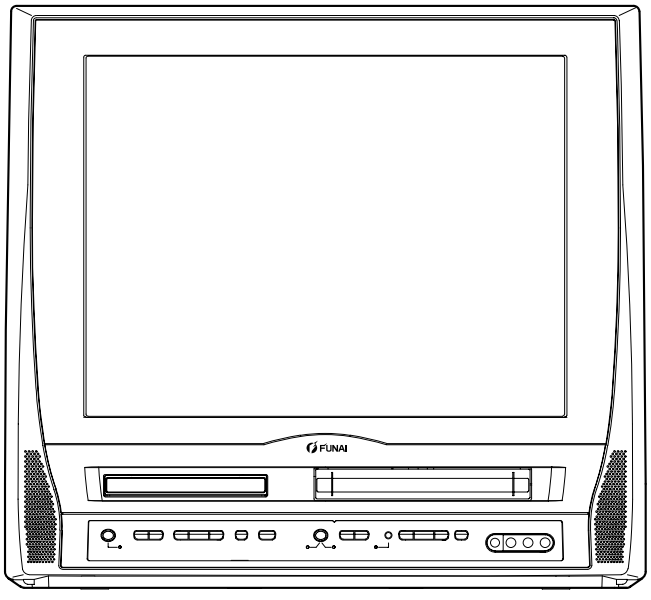
21" COLOR TV/DVD/VCR COMBINATION

TVD-A2104PT
TVD-B2104PT
TVD-C2104PT
TVD-D2104PT



VHS PAL

VHS PAL SECAM

MAIN SECTION

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TVD-A2104PT
TVD-B2104PT
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Sec. 1: Main Section

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

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SPECIFICATIONS

✳Mode---------SP mode unless otherwise specified
✳Test input terminal
<Except Tuner>----------Video input (1 Vp-p)
Audio input (-10 dB)
<Tuner>----------Ant. input (80 dBμV) Video: PAL 87.5%
Audio: 30 kHz dev (1 kHz Sin)
<DVD>----------Test Disc: MDVD-P111, PTD 1-NOR

<DEFLECTION>

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	±5
2. Linearity	Horizontal	%	—	±18
	Vertical	%	—	±10
3. High Voltage	—	kV	25	—

<VIDEO & CHROMA>

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	mm	—	0.4
	Corner	mm	—	2.5
	Side	mm	—	1.5
2. Contrast Control Range	—	dB	—	6
3. Brightness (100% White Full Field)	Contrast: Max	ft-L	40	24
4. Color Temperature	—	°K	8500	—

<DVD>

TP (DVD-C: J454, DVD-Y: J453, DVD-AR: J901, DVD-AL: J902)

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution (MDVD-P111 TIT.2 CHP.14)	—	Line	350	330
2. Video S/N (MDVD-P111 TIT.2 CHP.8)	—	dB	60	55
3. S/N Chroma AM (MDVD-P111 TIT.2 CHP.13)	—	dB	58	53
3. S/N Chroma PM (MDVD-P111 TIT.2 CHP.13)	—	dB	58	53
4. Audio Distortion (LPCM 48 kHz, W/LPF) (PTD 1-NOR TIT.1 CHP.1)	L R	%	0.03 0.03	0.07 0.07
5. Audio freq. response (LPCM 48kHz) (PTD 1-NOR TIT.1 CHP.5 -- 10)	L, 20 Hz R, 20 Hz L, 20 kHz R, 20 kHz	dB	0	+4/-5
6. Audio S/N (LPCM 48KHz,W/LPF,A-WTD) (PTD 1-NOR TIT.1 CHP.1 -- 2)	L R	dB	85	75

<VCR>

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution	(R/P, SP)	Line	230	200
2. Jitter (Low)	(R/P, SP)	μs	0.1	≤ 0.2
3. S/N Chroma AM(SP)	(R/P, SP)	dB	38	≥ 33
PM(SP)	(R/P, SP)	dB	36	≥ 33
4. Wow & Flutter (JIS, UNWTD)	(R/P, SP)	%	0.25	≤ 0.5

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Video S/N (80dBμV, TV E4ch)	—	dB	45	≥ 40
2. Audio S/N (W/LPF)	—	dB	43	≥ 40

<NORMAL AUDIO>

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

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	(R/P, SP)	W	1.0	0.8
2. Audio S/N (W/LPF)	(R/P, SP)	dB	40	≥ 36
3. Audio distortion (W/LPF,-10dB 1kHz IN)	(R/P, SP)	%	3.0	≤ 5.0
4. Audio Freq. Response (-20dB 1kHz IN) 200 Hz	(R/P, SP)	dB	—	5/-10
6 kHz	(R/P, SP)	dB	—	5/-10

<Hi-Fi AUDIO>

All items are measured at J369 (AUDIO-L) and J370 (AUDIO-R).

Description	Condition	Unit	Nominal	Limit
1. Output Level (-10dB 1kHz IN)	(R/P, SP)	dB	-8.0	-8±4
2. Audio Distortion (-10dB 1kHz IN)	(R/P, SP)	%	0.5	1.0
3. Freq. Response (-15dB 1kHz IN) 20 Hz	(R/P, SP)	dB	0	±4
20 kHz	(R/P, SP)	dB	0	±4

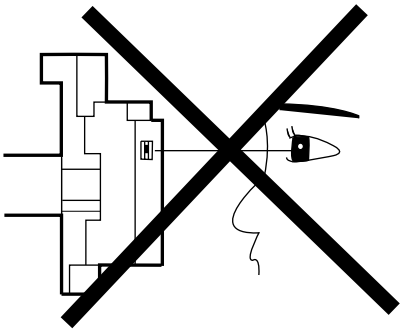
Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should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

<TV NORM, TUNER SENSIVITY, RECEPTIVE TV CHANNELS>

Model	TV Norm	Tuner Sensivity	Receptive TV Channels
TVD-A2104PT	PAL-B/G	NOM: VHF 46dBμV / UHF 47dBμV MAX: VHF 53dBμV / UHF 56dBμV	E2 - E12, IA - IH, E21 - E69, S01 - S03, Z+1, Z+2, S1 - S41, gap2
TVD-B2104PT	PAL-I	NOM: VHF 46dBμV / UHF 47dBμV MAX: VHF 53dBμV / UHF 56dBμV	IRA - IRJ, gapC, E21 - E69, S01 - S03, Z+1, Z+2, S1 - S41
TVD-C2104PT	SECAM-L/L'	NOM: VHF 47dBμV / UHF 47dBμV MAX: VHF 54dBμV / UHF 57dBμV	F1 - F10, E21 - E69, FB - FQ, S4 - S41
	PAL-B/G	NOM: VHF 46dBμV / UHF 47dBμV MAX: VHF 53dBμV / UHF 56dBμV	E2 - E12, IA - IH, E21 - E69, S01 - S03, Z+1, Z+2, S1 - S41, gap2
TVD-D2104PT	PAL/SECAM-BG/DK	PAL NOM: VHF 46dBμV / UHF 47dBμV MAX: VHF 53dBμV / UHF 56dBμV SECAM NOM: VHF 47dBμV / UHF 47dBμV MAX: VHF 54dBμV / UHF 57dBμV	E2 - E12, E21 - E69, S01 - S03, Z+1, Z+2, S1 - S41, gap2, R1 - R12

LASER BEAM SAFETY PRECAUTIONS

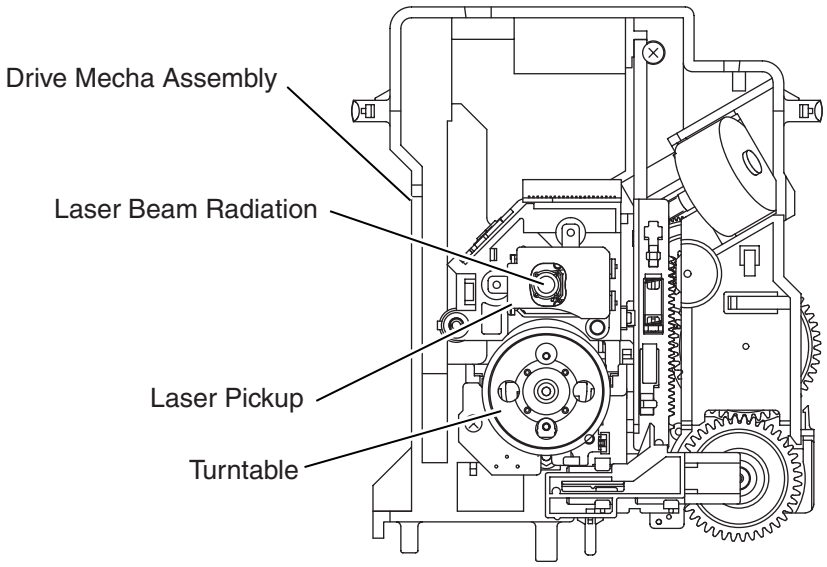
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



IMPORTANT SAFETY PRECAUTIONS

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

Safety Precautions for TV Circuit

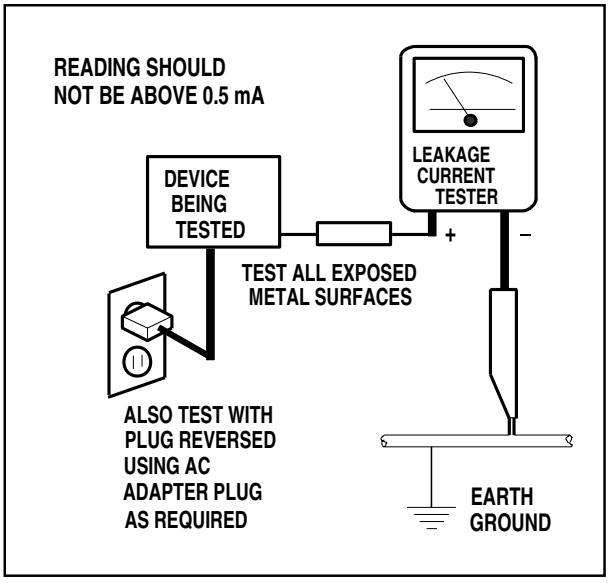
1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

c. **Antenna Cold Check -** With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. **Leakage Current Hot Check -** With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a 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 servic-

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

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

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

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

5. Hot Chassis Warning -

a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

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

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

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

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

8. Product Safety Notice - Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to 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	Clearance Distance (d), (d')
220 to 240 V	≥ 3mm(d) ≥ 6 mm(d')

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

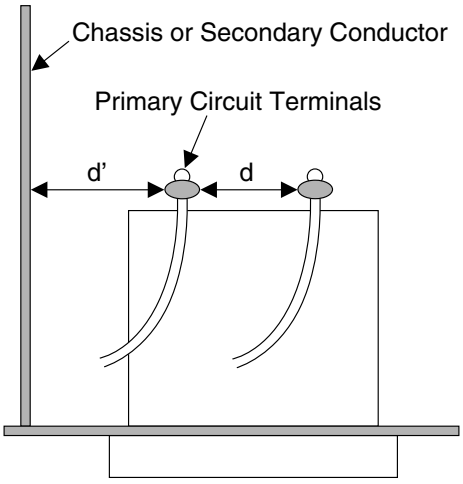


Fig. 1

2. Leakage Current Test

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

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.

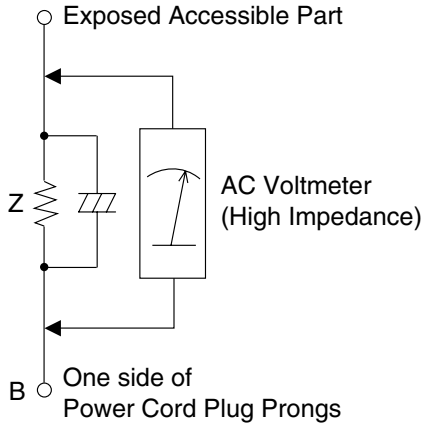


Fig. 2

Table 2: Leakage current ratings for selected areas

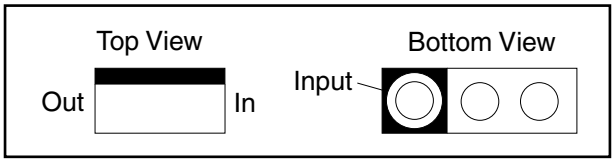
AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
220 to 240 V	2kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	RF or Antenna terminals
	50kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	A/V Input, Output

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

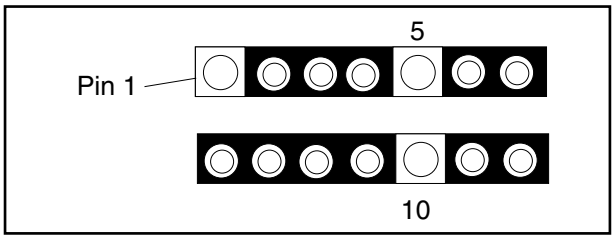
STANDARD NOTES FOR SERVICING

Circuit Board Indications

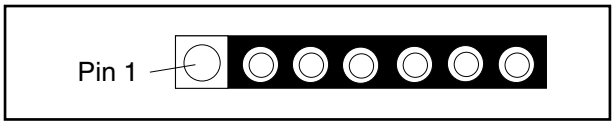
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



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

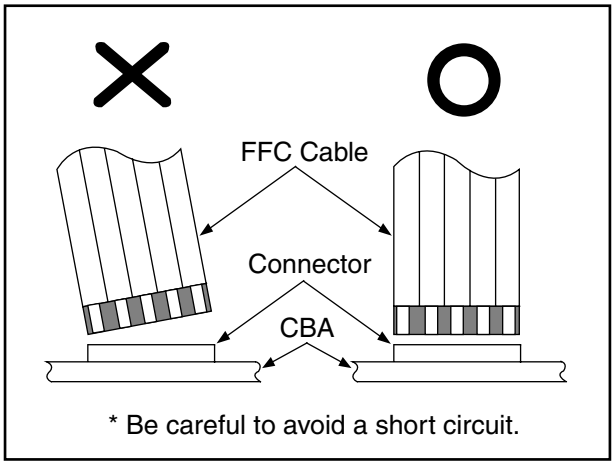


3. The 1st pin of every pin connector are indicated as shown:



Instructions for Connectors

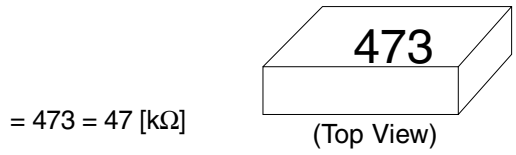
1. When you connect or disconnect FFC cable (connector), be sure to disconnect the AC cord.
2. FFC cable (connector) should be inserted parallel into the connector, not at an angle.



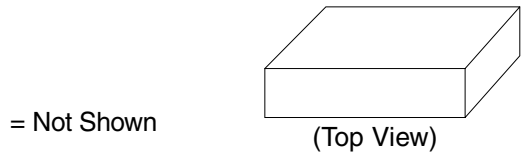
[CBA= Circuit Board Assembly]

How to Read the Values of the Rectangular Type Chip Components

Example:
(a) Resistor



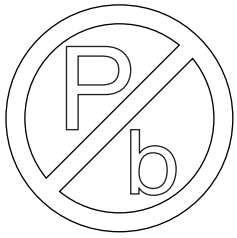
(b) Capacitor



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

Pb (Lead) Free Solder

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



Pb free mark

Replacement Procedures for Leadless (Chip) Components

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

1. Preparation for replacement

1.1. Pb free solder

a. Soldering Iron
Use a soldering iron for Pb free solder.

b. Solder
Be sure to use Pb free solder.

c. Soldering time
Do not apply heat for more than 4 seconds.

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

1.2. Standard solder

e. Soldering Iron
Use a pencil-type soldering iron (less than 30 watts).

f. Solder
Eutectic solder (Tin 63%, Lead 37%) is recommended.

g. Soldering time
Do not apply heat for more than 4 seconds.

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

Notes:

a. Leadless components must not be reused after removal.

b. Excessive mechanical stress and rubbing for the component electrode must be avoided.

2. Removing the leadless component

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

Notes:

a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.

b. Take care not to break the copper foil on the printed board

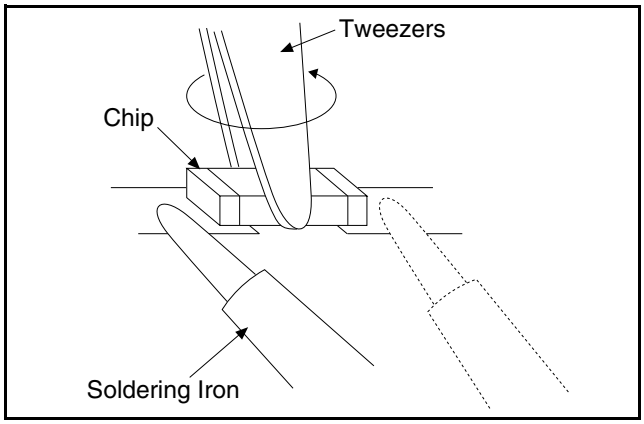
3. Installing the leadless component

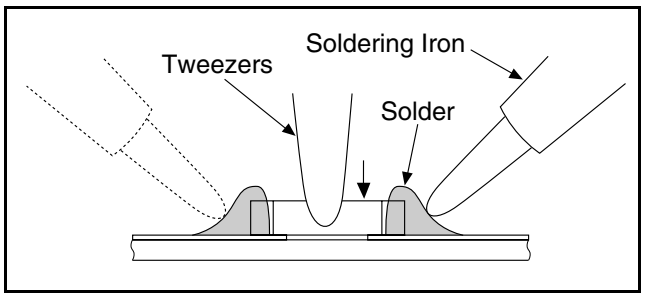
a. Presolder the contact points of the circuit board.

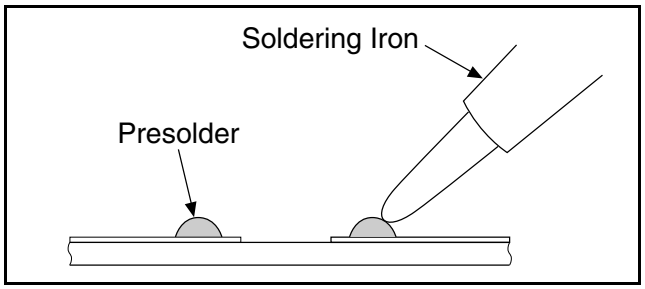
b. Press the part downward with tweezers and solder both electrodes as shown below.

Note:

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







How to Remove / Install Flat Pack IC

Caution:

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

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

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

b. Remove the Flat Pack- IC with tweezers while applying the hot air.

With Soldering Iron:

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

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

With Iron Wire:

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

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

c. Pull up on the wire as the solder melts so as to lift the IC leads from the CBA contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

Note:

When using a soldering iron, care must be taken to ensure that the Flat Pack - IC is not being held by glue, or when it is removed from the CBA, it may be damaged if force is used.

2. Installation

a. Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the CBA, so you can install a replacement Flat Pack - IC more easily.

b. The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the CBA when positioning for installation. Then pre - solder the four corners of the Flat Pack-IC (See Fig. S-1-7).

c. Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

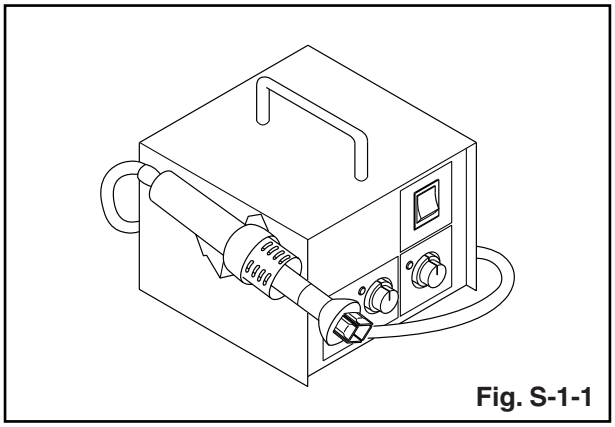


Fig. S-1-1

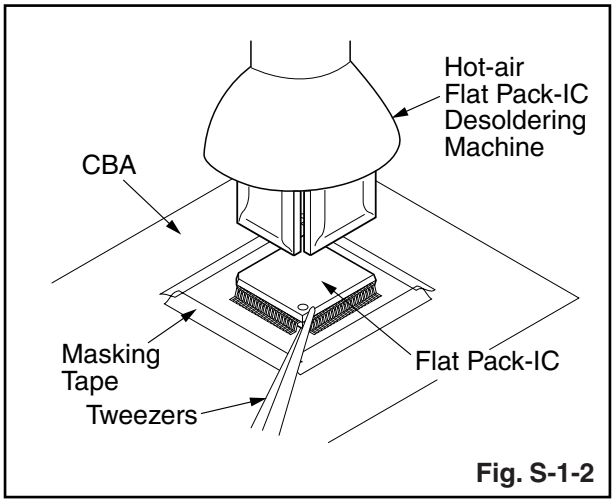


Fig. S-1-2

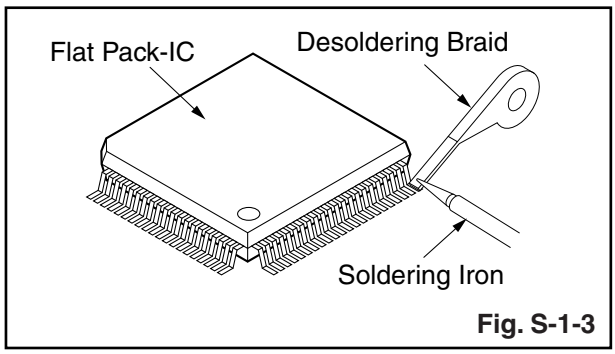


Fig. S-1-3

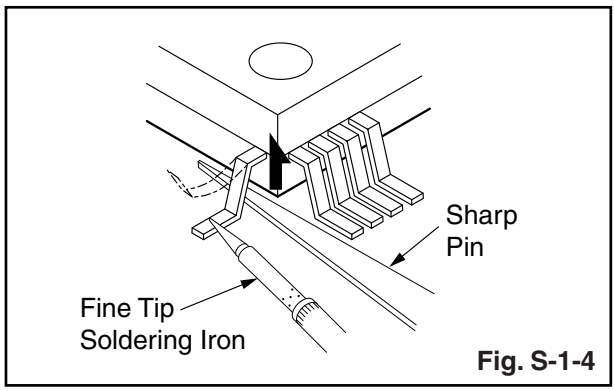


Fig. S-1-4

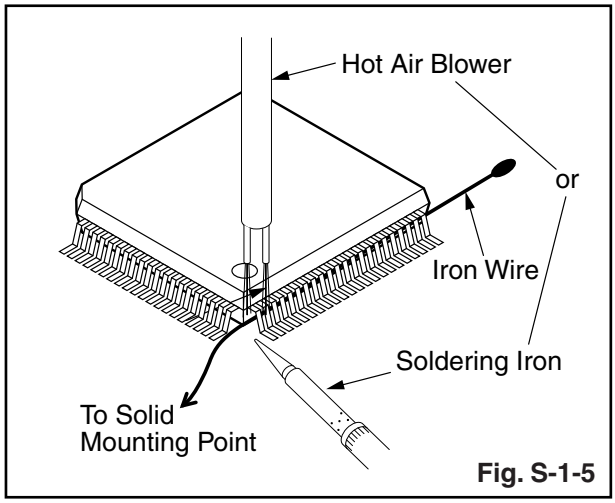


Fig. S-1-5

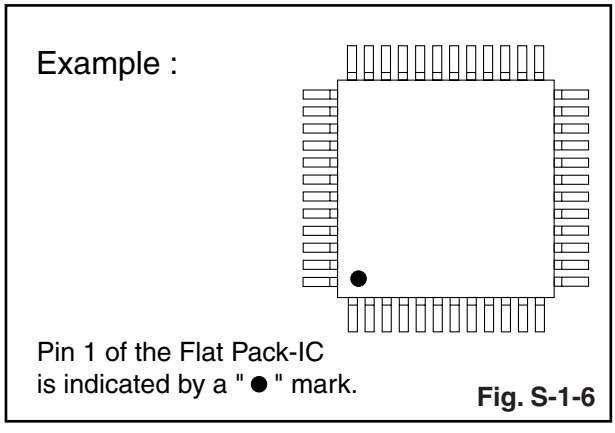


Fig. S-1-6

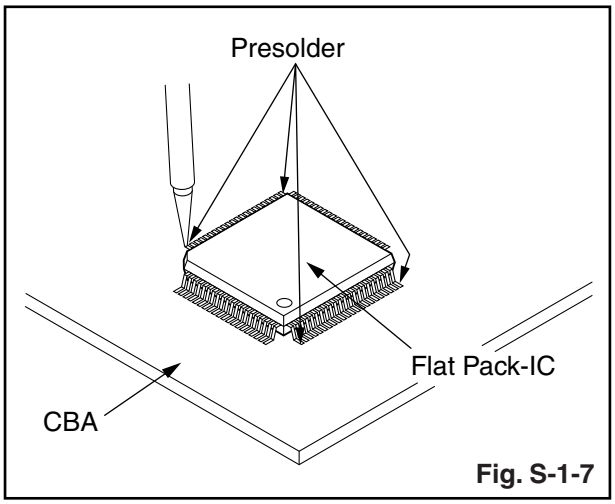
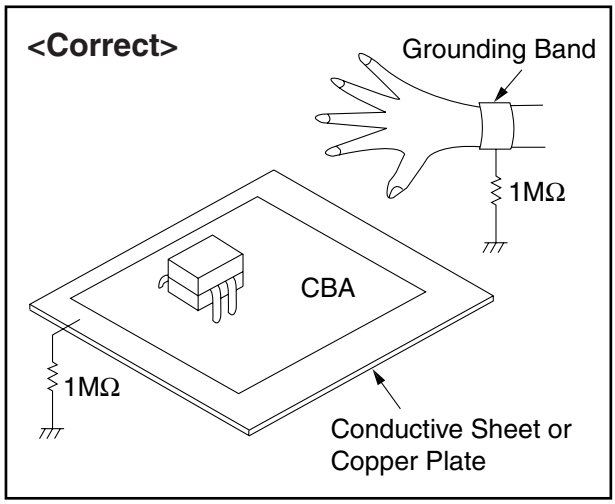


Fig. S-1-7



Instructions for Handling Semiconductors

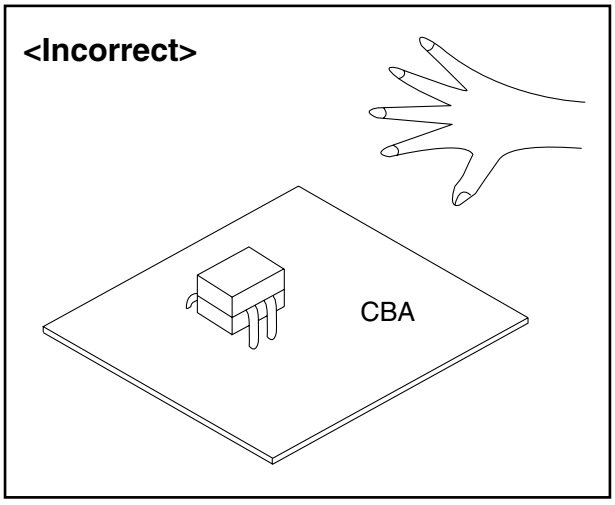
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

Ground for Human Body

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

Ground for Work Bench

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



PREPARATION FOR SERVICING

How to Enter the Service Mode

Caution: 1

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

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

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

   Details are as follows.

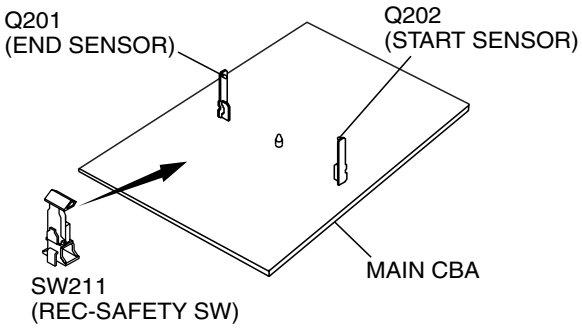
Key	Adjustment Mode
PICTURE	Picture adjustment mode: Press the PICTURE button to change from BRT (Bright), *CNT (Contrast), *COL (Color), *TNT(Tint) and SHP(SHARP). Press CH ▲/▼ key to adjust Initial Value. *Marked items are not necessary to adjust normally.
VOL ▼	SECAM Black Level adjustment mode: See adjustment instructions page 1-7-3. Cut-Off adjustment mode: See adjustment instructions page 1-7-4. White Balance adjustment mode: See adjustment instructions page 1-7-5.
0	C-Trap adjustment mode: See adjustment instructions page 1-7-3.
1	No need to use.
2	H adjustment mode: See adjustment instructions page 1-7-2.
3	Head switching point adjustment mode (Auto adjustment): See adjustment instructions page 1-7-7.
4	Auto record mode: Perform recording (15 Sec.)-->Stop-->Rewind (Zero return) automatically.
5	Head switching point adjustment mode (Manual adjustment): See adjustment instructions page 1-7-7.
6	No need to use.
7	No need to use.
8	H. Shift adjustment mode: See adjustment instructions page 1-7-4.
9	V.size/V. shift adjustment: See adjustment instructions page 1-7-4.

Caution: 2

1. 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

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



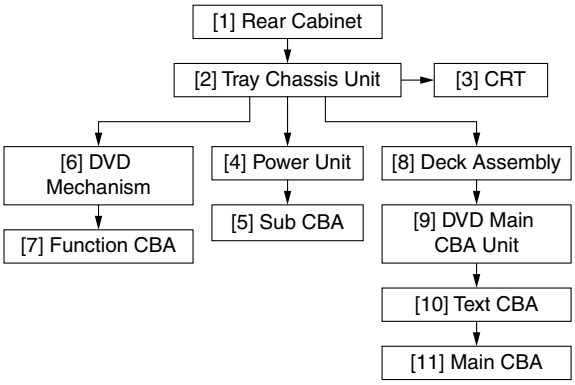
CABINET DISASSEMBLY INSTRUCTIONS

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

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/UNLOCK/ RELEASE/UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	1	6(S-1), (S-2), 2(S-3)	-
[2]	Tray Chassis Unit	2, 3, 5	Anode Cap, *CN501A, CRT CBA, *CL501A, *CN151, *CN301, *CN571, *CN601, *CN1801	1
[3]	CRT	3	4(S-4)	-
[4]	Power Unit	2, 5	4(S-5), *CN302, *CN604, *CN756, *CN1803	-
[5]	Sub CBA	2	7(S-6)	-
[6]	DVD Mechanism	2, 4, 5	2(S-7), 4(S-8), Loader Cover, *CN201, *CN301	2 2-1 2-2 2-3 2-4 3
[7]	Function CBA	2, 5	2(S-9), *CN755	-
[8]	Deck Assembly	2, 5	6(S-10), (S-11), Top Cover, (S-12), Botton, Plate, (S-13), (S-14), 7(S-15), *CN201, *CL401, *CL402, *CL403	4
[9]	DVD Main CBA Unit	2, 5	2(S-16), Shield Box, *CN753, *CN754	-
[10]	Text CBA	2, 5	*CN751, *CN752	-
[11]	Main CBA	2	2(S-17), (S-18)	-
		↓ (1)	↓ (2)	↓ (3) ↓ (4) ↓ (5)

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

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

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

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

Reference Notes in the Table

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.

Reference Notes in the Table
CAUTION 1: Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

1. Disconnect the following: Anode Cap, CN501A, CRT CBA, CL501A, CN151, CN301, CN571, CN601, and CN1801.
   Then remove Tray Chassis Unit.

CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.

To avoid damage of pickup follow next procedures.

2-1. Remove two screws (S-7) and remove Loader Cover.

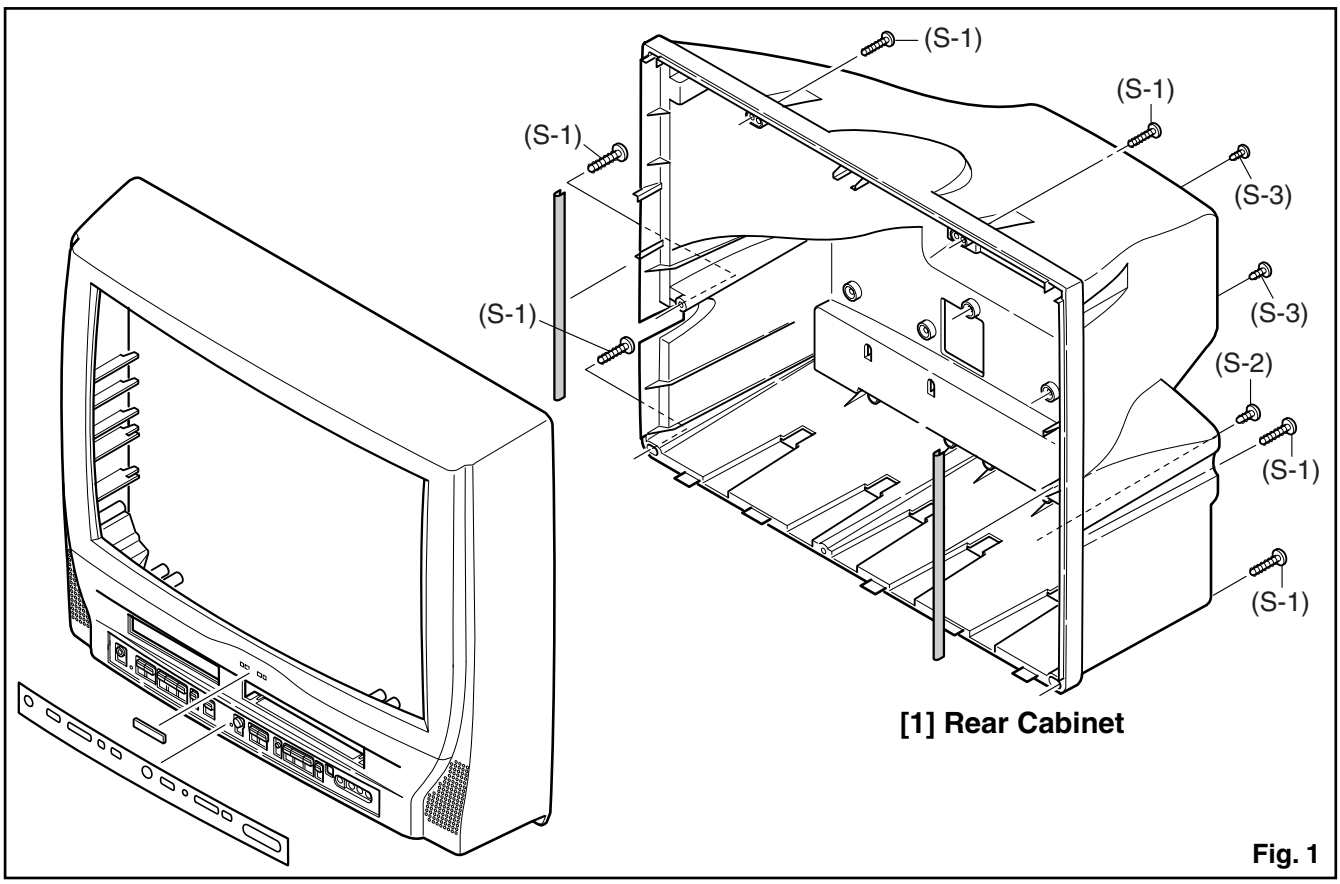
2-2. Disconnect Connector (CN301) on the DVD Main CBA Unit.

2-3. Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. 4)

2-4. Remove four screws (S-8) and remove DVD Main CBA Unit.

CAUTION 3: When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. 4)

4. Remove screws 6(S-10) and (S-11), and remove Top Cover. Remove screw (S-12) and remove Bottom Plate. Remove screws (S-13), (S-14) and 7(S-15). Disconnect Connector (CN201). Then, desolder connectors (CL401, CL402, CL403) and lift up the Deck Assembly.



[1] Rear Cabinet

Fig. 1

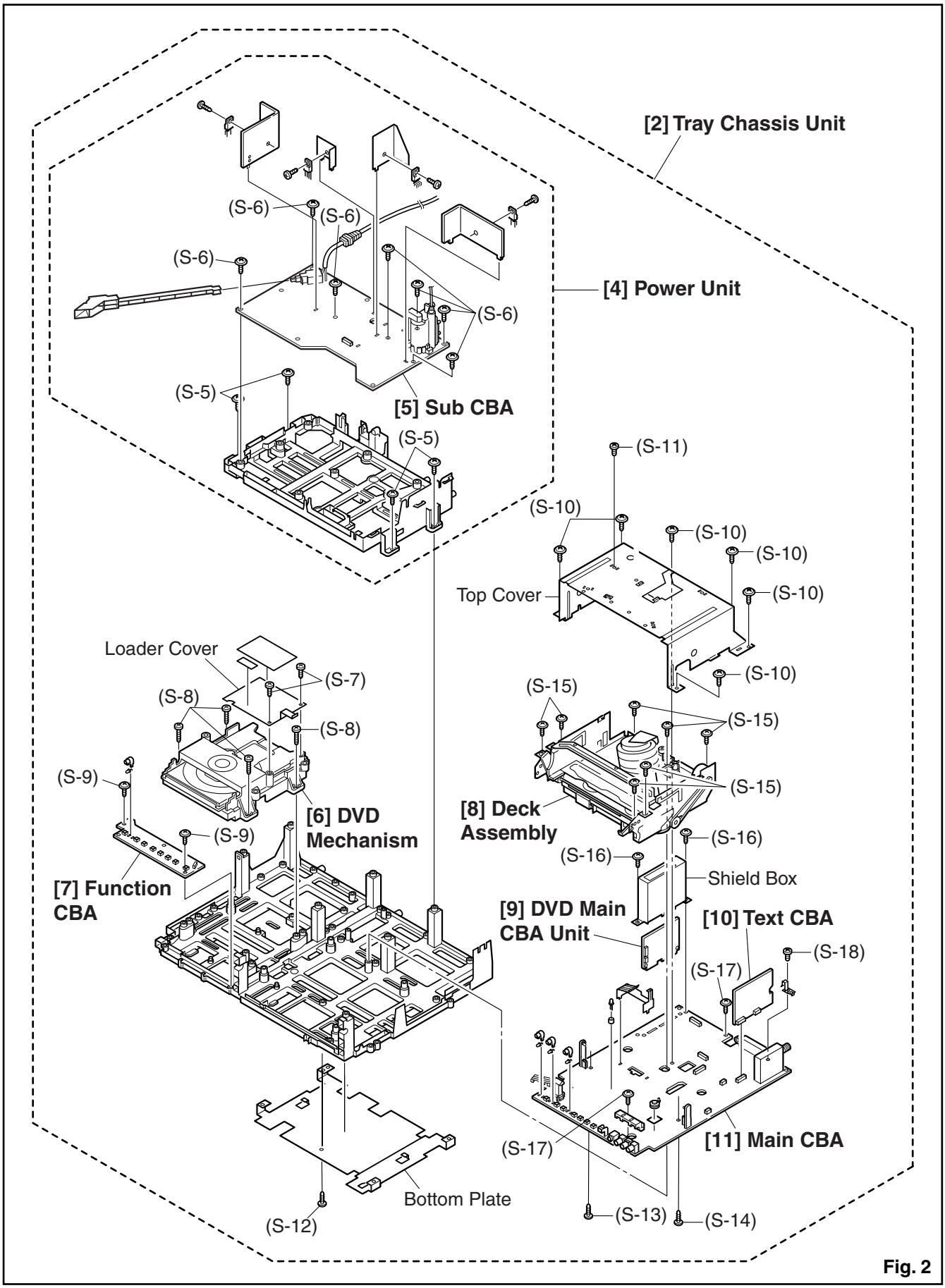

[2] Tray Chassis Unit
(S-6)
(S-6)
(S-6)
(S-6)
[4] Power Unit
(S-5)
[5] Sub CBA
(S-5)
(S-11)
(S-10)
(S-10)
(S-10)
Top Cover
(S-10)
(S-10)
Loader Cover
(S-7)
(S-8)
(S-8)
(S-15)
(S-15)
(S-15)
(S-9)
[6] DVD Mechanism
[8] Deck Assembly
(S-9)
(S-16)
(S-16)
Shield Box
[7] Function CBA
[9] DVD Main CBA Unit
[10] Text CBA
(S-18)
(S-17)
(S-17)
[11] Main CBA
Bottom Plate
(S-12)
(S-13)
(S-14)

Fig. 2

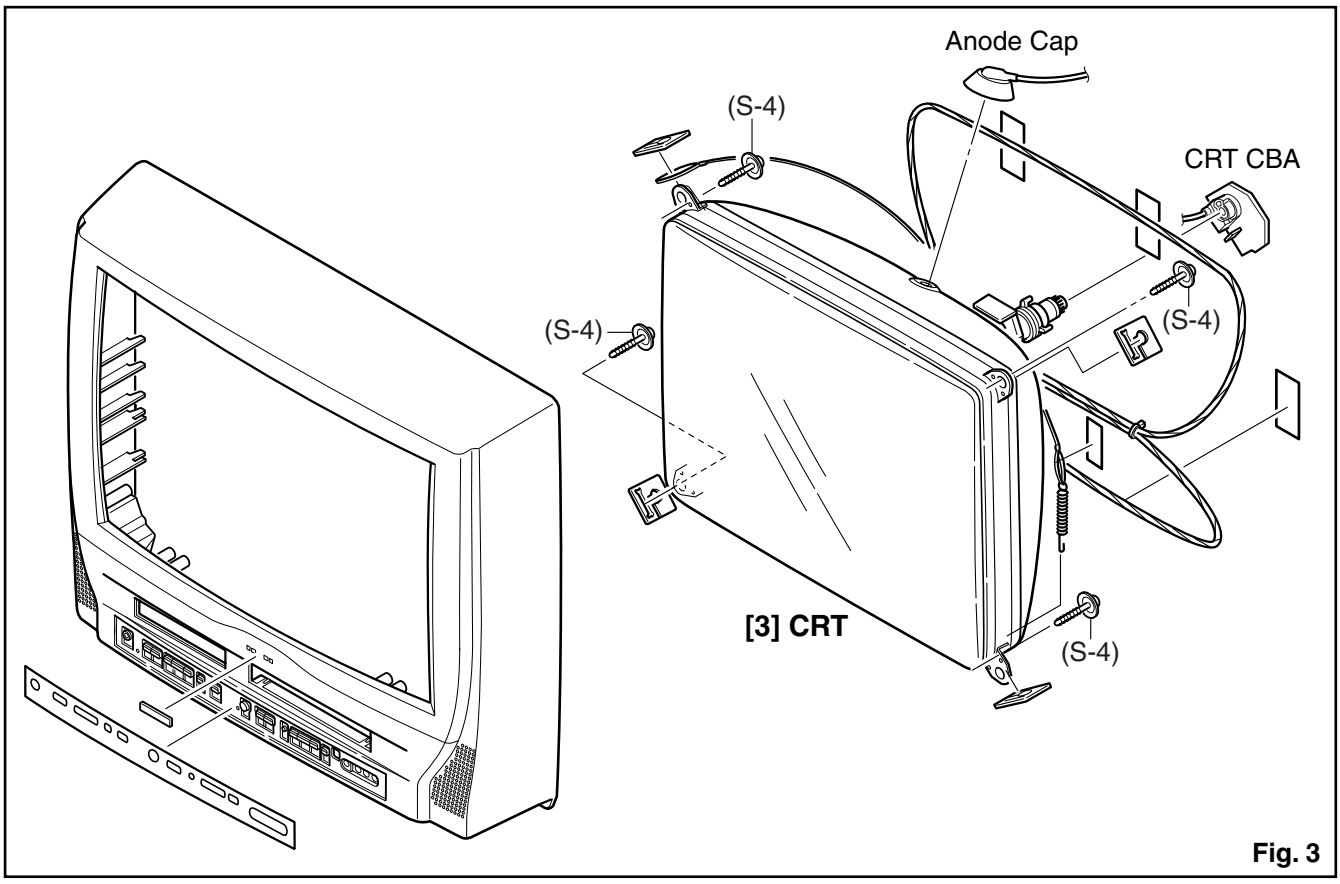

Anode Cap
(S-4)
CRT CBA
(S-4)
(S-4)
[3] CRT
(S-4)

Fig. 3

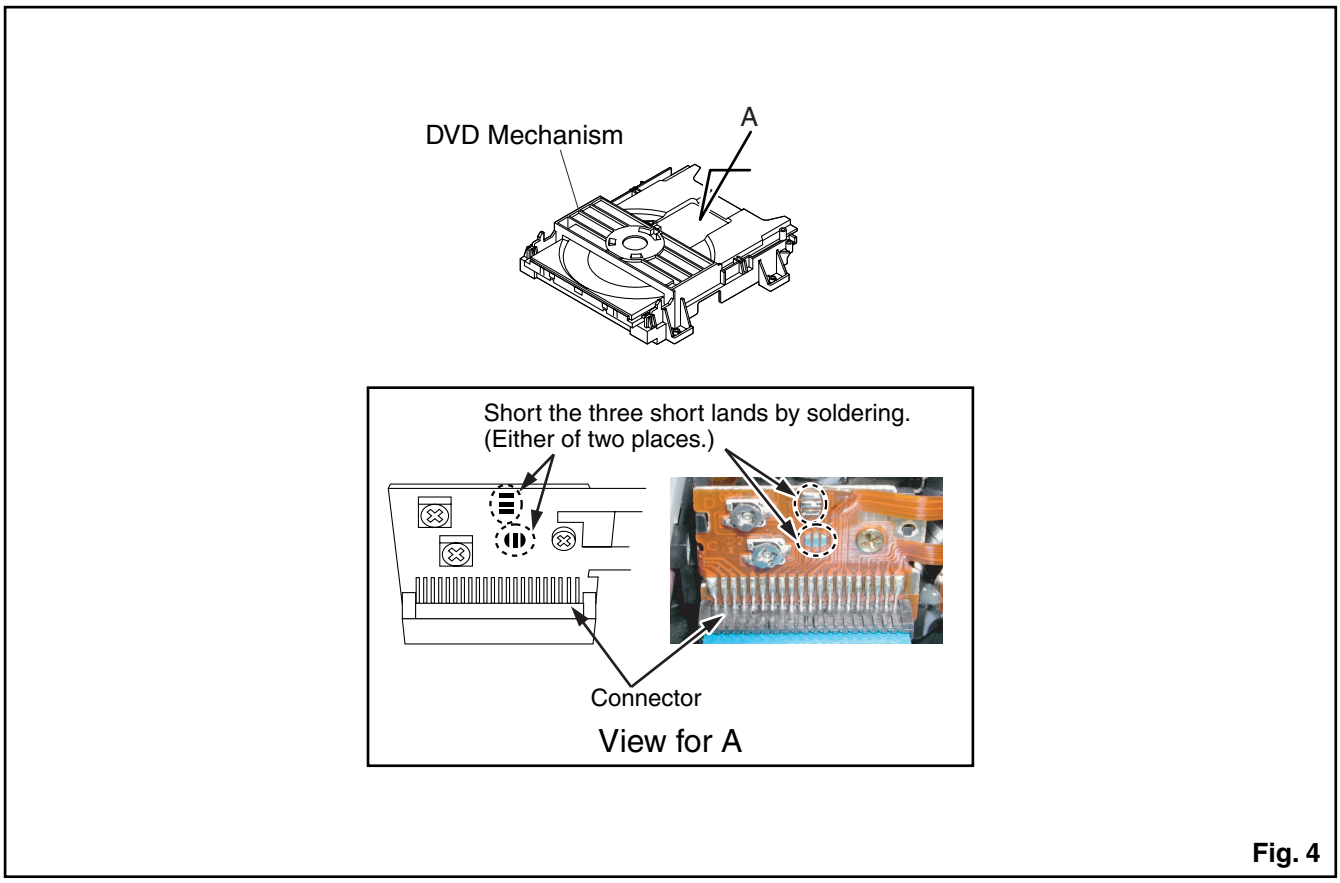

DVD Mechanism
A
Short the three short lands by soldering.
(Either of two places.)
Connector
View for A

Fig. 4

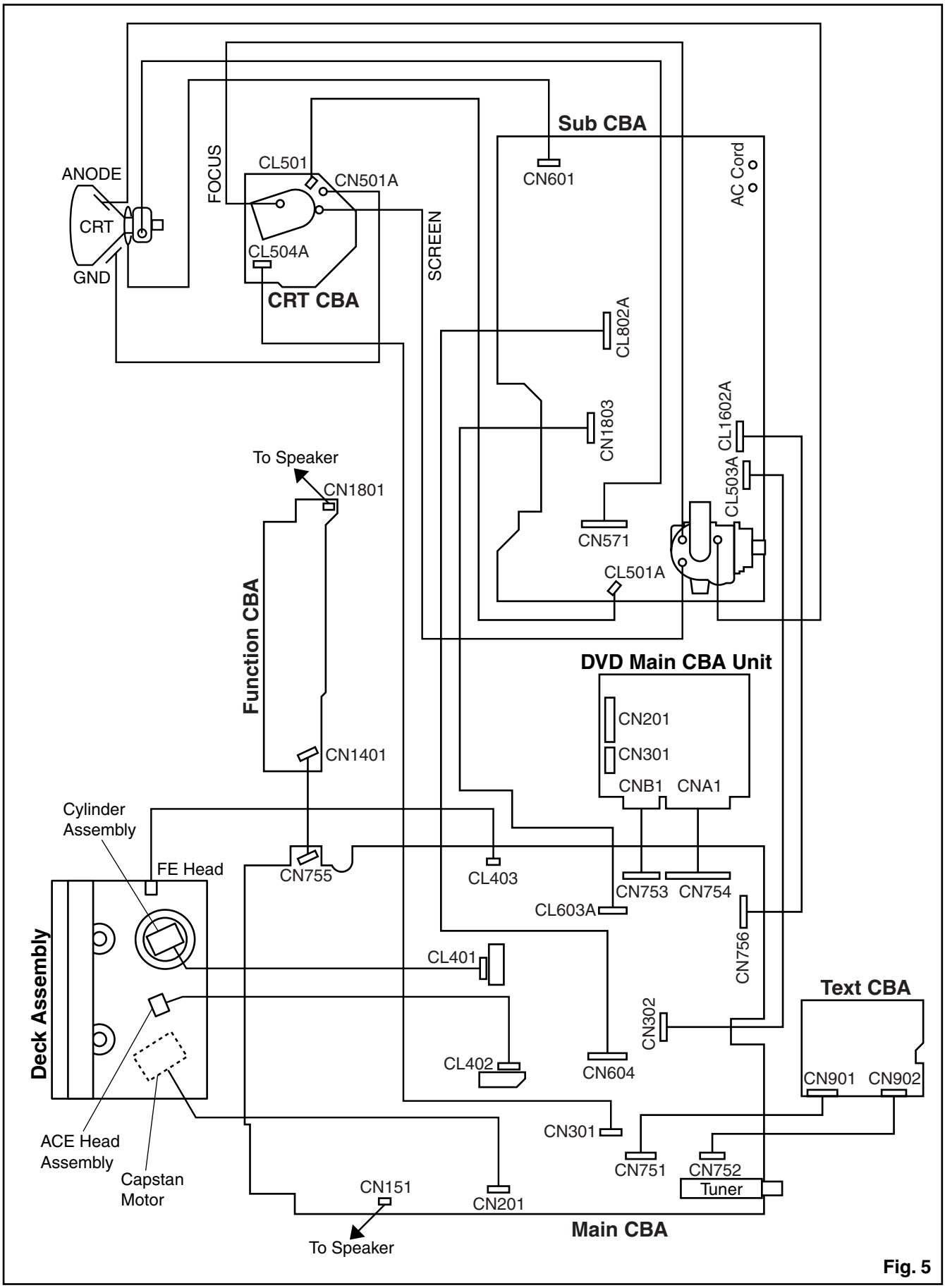

Sub CBA
ANODE
CRT
GND
FOCUS
CL501
CN501A
CL504A
CRT CBA
SCREEN
CN601
AC Cord
CL802A
CN1803
CL1602A
CL503A
CN571
CL501A
To Speaker
CN1801
Function CBA
CN1401
DVD Main CBA Unit
CN201
CN301
CNB1
CNA1
Cylinder
Assembly
FE Head
CN755
CL403
CN753
CN754
CL603A
CN756
CL401
Deck Assembly
Text CBA
CN302
CL402
CN604
CN901
CN902
CN301
ACE Head
Assembly
Capstan
Motor
CN751
CN752
Tuner
CN151
CN201
Main CBA
To Speaker

Fig. 5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

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

NOTE:

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

Test Equipment Required

1. PAL Pattern Generator (Color Bar, Monoscope, Black Raster, White Raster, Sympte)
2. SECAM Pattern Generator (Gray Scale)
3. AC Milli Voltmeter (RMS)
4. Alignment Tape (FL6A), Blank Tape (E180)
5. DC Voltmeter
6. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div,
   F-Range: DC~AC-60MHz
7. Frequency Counter
8. Plastic Tip Driver
9. RF input (at each broadcasting system)
   Receiving Channel : VHF Low
   Input level : 80dBμV
10. Ext.input
    FRONT VIDEO-IN JACK or REAR SCART JACK

How to Set up the Service mode:

NOTE:

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

Service Mode:

1. Turn the power on. (Use main power on the TV unit.)
2. Press [STANDBY], [2], [7], [1], and [MUTE] buttons on the remote control unit in that order within 5 seconds.

- To cancel the service mode, press [STANDBY] button on the remote control.

How to set up the option code

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

Model	Option Code
TVD-A2104PT	0146
TVD-B2104PT	0144
TVD-C2104PT	0145
TVD-D2104PT	0147

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

1. DC 114V (+B) Adjustment

Purpose: To obtain correct operation.

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

Test point	Adj. Point	Mode	Input
R569 outside (+B), Heat Sink (GND)	VR601	RF (or Ext.)	Color Bar
Tape	**M. EQ.**	**Spec.**	
---	DC Voltmeter, Plastic Tip Driver	+114±0.5V DC	

Note: R569 outside (+B), Heat Sink(GND), VR601 --- Sub CBA

1. Connect the unit to AC Power Outlet. (exact AC230V)
2. Input a color bar signal from RF (or Ext.) input and leave it for at least 20 minutes.
3. Connect DC Volt Meter to R569 outside (+B) and Heat Sink(GND).
4. Adjust VR601 so that the voltage of R569 outside (+B) becomes +114±0.5V DC.

2. H Adjustment

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

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

Test point	Adj. Point	Mode	Input
R583	CH ▲/▼ buttons	Ext.	---
Tape	**M. EQ.**	**Spec.**	
---	Frequency Counter	15.625kHz±300Hz	

Note: R583 --- Sub CBA

1. Connect Frequency Counter to R590.
2. Set the unit to the Ext. mode and no input is necessary. Enter the Service mode.
   (See page 1-7-1.)
3. Operate the unit for at least 20 minutes.
4. Press [2] button on the remote control unit and select H-Adj mode.
5. Press [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 15.625kHz±300Hz.
6. Turn the power off and on again.

3. C-Trap Adjustment

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

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

Test point	Adj. Point	Mode	Input
Q501 Base (B-OUT)	CH ▲/▼ buttons	RF (or Ext.)	Color Bar
Tape	**M. EQ.**	**Spec.**	
---	Oscilloscope, Pattern Generator	200mVp-p Max.	

Figure

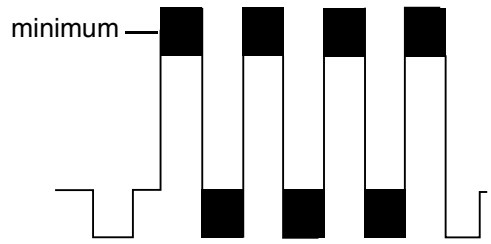


Fig. 1

Note: Q501 Base (B-Out)--- CRT CBA

1. Connect Oscilloscope to Q501(Base).
2. Input a color bar signal from RF (or Ext.) input. Enter the Service mode. (See page 1-7-1.)
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 (4.43MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

4. SECAM Black Level Adjustment

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

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

Test point	Adj. Point	Mode	Input
CN303 (1 pin)	CH ▲/▼ buttons	Ext.	SECAM Gray Scale
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator, Analog Oscilloscope (unusable Digital Oscilloscope)	---	

Note: CN303 --- Main CBA

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Input the SECAM Gray Scale signal from Ext. input.
3. Enter the service mode. (See page 1-7-1.)
4. To enter the C/D/S mode, press [VOL ▼] on the remote control unit.
5. To select SBR (SECAM Black Level R-Y), press [6] button on the remote control unit.
6. Press [CH ▲/▼] buttons to adjust Y signal to the black ref. level at CN303(1 pin).
7. To select SBB (SECAM Black Level B-Y), press [7] button on the remote control unit.
8. Press [CH ▲/▼] buttons to adjust Y signal to the black ref. level at CN303(1 pin).

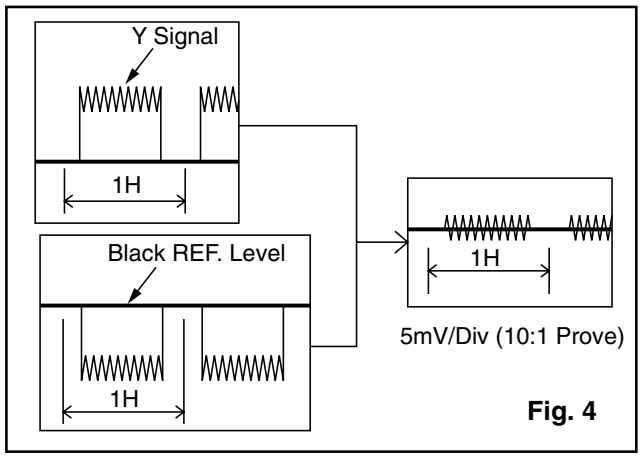


Fig. 4

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	Adj. Point	Mode	Input
Screen	CH ▲/▼ buttons	RF (or Ext.)	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	Top: 90±5% Bottom: 88±2%	

1. Enter the Service mode. (See page 1-7-1.)
   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 and leave it for at least 20 minutes.
3. Press [CH ▲/▼] buttons on the remote control unit so that the monoscope pattern is (Top: 90±5%, Bottom: 88±2%) 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	Adj. Point	Mode	Input
Screen	CH ▲/▼ buttons	RF (or Ext.)	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-7-1.)
   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 and leave it for at least 20 minutes.
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	Adj. Point	Mode	Input
Screen	CH ▲/▼ buttons	RF (or Ext.)	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-7-1.)
   Press [8] button on the remote control unit and select H-P mode.
2. Input monoscope pattern and leave it for at least 20 minutes.
3. Press [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	Adj. Point	Mode	Input
Screen	Screen-Control, CH ▲/▼ buttons	RF (or Ext.)	Black Raster
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See Reference Notes below	

Notes:
Screen Control (FBT) --- Sub CBA
FBT= Fly Back Transformer
Use the Remote Control Unit

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

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

9. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

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

Figure

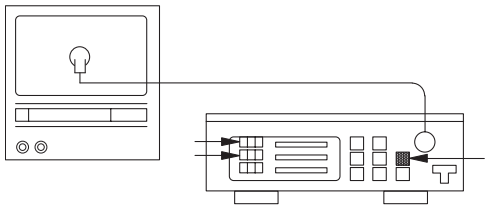


Fig. 5

Note: Use remote control unit

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

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

10. Sub-Brightness Adjustment

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

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

Figure

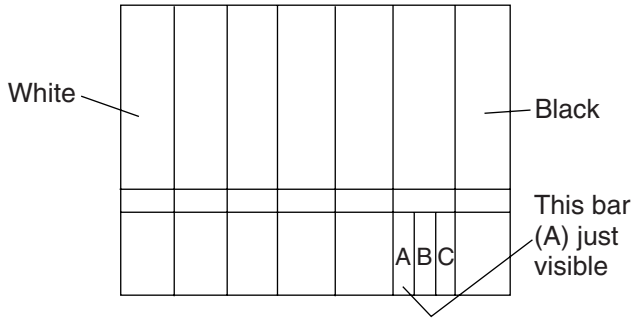


Fig. 6

Note: Bar (A) in Fig. 6 --- 0 IRE

1. Enter the service mode. (See page 1-7-1.) Then input SYMPTE signal from RF (or Ext.) input and leave it for at least 20 minutes.
2. Press [PICTURE] button. (Each time [PICTURE] button is pressed, display will change BRT, CNT, COL, TNT, and SHP in that order.) Select BRT and press [CH ▲/▼] buttons so that the bar (A) in Fig. 6 is just visible.
3. Turn the power off and on again.

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

General

1. Enter the Service mode. (See page 1-7-1)
2. Press [PICTURE] button. (Each time [PICTURE] button is pressed, display will change BRT, CNT, COL, TNT, and SHP in that order.)

CONTRAST (CNT)

1. Press [PICTURE] button on the remote control unit. Then select CNT display.
2. Press [CH ▲/▼] buttons on the remote control unit so that the value of "CONTRAST" (CNT) becomes 83.

COLOR (COL)

1. Press [PICTURE] button on the remote control unit. Then select "COLOR" (COL) display.
2. Press [CH ▲/▼] buttons on the remote control unit so that the value of "COLOR" (COL) becomes 65.

TINT (TNT)

1. Press [PICTURE] button on the remote control unit. Then select "TINT" (TNT) display.
2. Press [CH ▲/▼] buttons on the remote control unit so that the value of "TINT" (TNT) becomes 63.

SHARP (SHP)

1. Press [PICTURE] button on the remote control unit. Then select "SHARP" (SHP) display.
2. Press [CH ▲/▼] buttons on the remote control unit and select "0."

12. Focus Adjustment

Purpose: Set the optimum Focus.

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

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

Note: Focus VR (FBT) --- Sub 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.

13. Head Switching Position Adjustment

Purpose: Determine the Head Switching Position during Playback.

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

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

Manual Adjustment

1. Enter the service mode. (See page 1-7-1.)
2. Playback the test tape (FL6A).
3. Press the number [5] button on the remote control unit.
4. The Head Switching position will display on the screen; if adjustment is necessary follow step 4. 6.5H (412.7μs) is preferable.
5. Press [CH ▲/▼] buttons on the remote control unit if necessary. The value will be changed in 0.5H steps up or down. Adjustable range is up to 9.5H. If the value is beyond adjustable range, the display will change as:
   Lower out of range: 0.0H
   Upper out of range: -.-H
6. Turn the power off and on again.

Auto Adjustment

1. Load the test tape (FL6A) that have been recorded the Head Switching Position Value.
2. Enter the service mode.
3. Press [3] button on the remote control unit in the tape stop mode. The unit playback and adjust the Head Switching Position automatically.
4. The adjusting report appears on upper left corner of the screen with blueback.
   In case of adjusting correctly: the Head Switching Position Value recorded in the test tape (FL6A) is indicated with green.
   In case of adjusting incorrectly: "NG" (red) is indicated with ejecting tape.

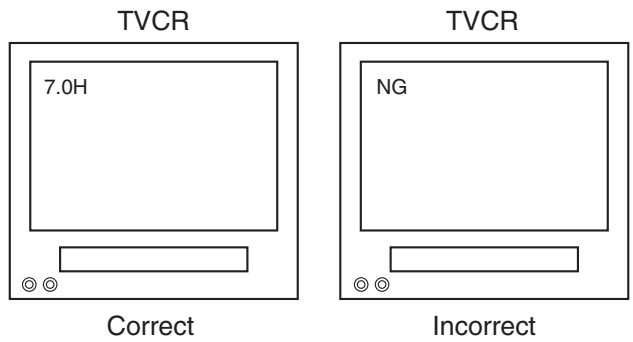


Fig. 7

FIRMWARE RENEWAL MODE

1. Turn the power on and press [SELECT] button on the remote control unit to put the DVD player into DVD mode. Then remove the disc on the tray.
   (It is possible to move to F/W version up mode only when the DVD player is in DVD mode with the tray opened.)
2. To put the DVD player into F/W version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order.
   Fig. a appears on the screen.

"*******" differ depending on the models.

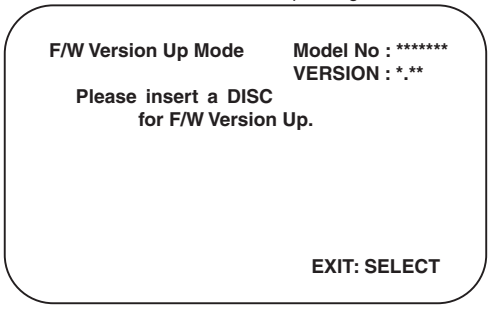


Fig. a Version Up Mode Screen

The DVD player can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.

3. Load the disc for version up.
4. The DVD player enters the F/W version up mode automatically. Fig. c appears on the screen. If you enter the F/W for different models, “Disc Error” will appear on the screen, then the tray will open automatically.

"*******" differ depending on the models.

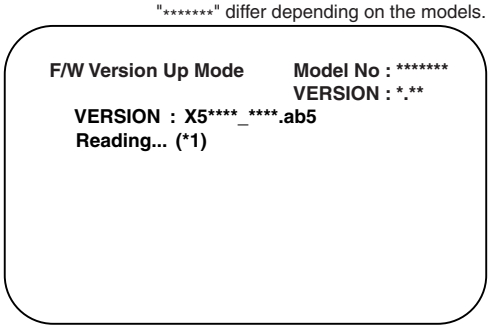


Fig. c Programming Mode Screen

The appearance shown in (*1) of Fig. c is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum in (*2) of Fig. e.

"*******" differ depending on the models.

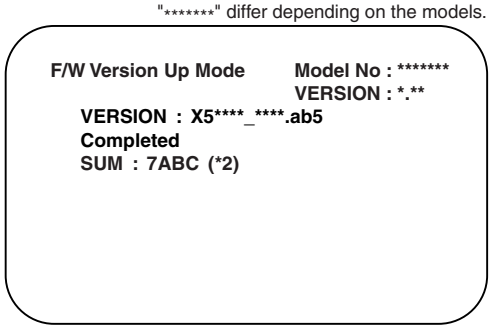


Fig. e Completed Program Mode Screen

At this time, no buttons are available.

6. Remove the disc on the tray.
7. Press [SELECT] button on the remote control unit to go to TV mode, or press [STANDBY] button on the unit to turn the power off.
8. Press [SELECT] button on the remote control unit to put the DVD player into DVD mode again.
9. Press [1], [2], [3], [4], and [STATUS] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

"*******" differ depending on the models.

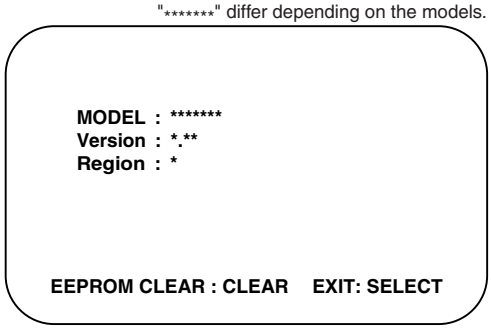


Fig. g

10. Press [CLEAR] button on the remote control unit.
    Fig. h appears on the screen.

"*******" differ depending on the models.

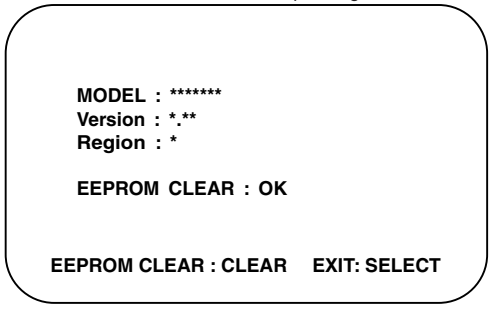


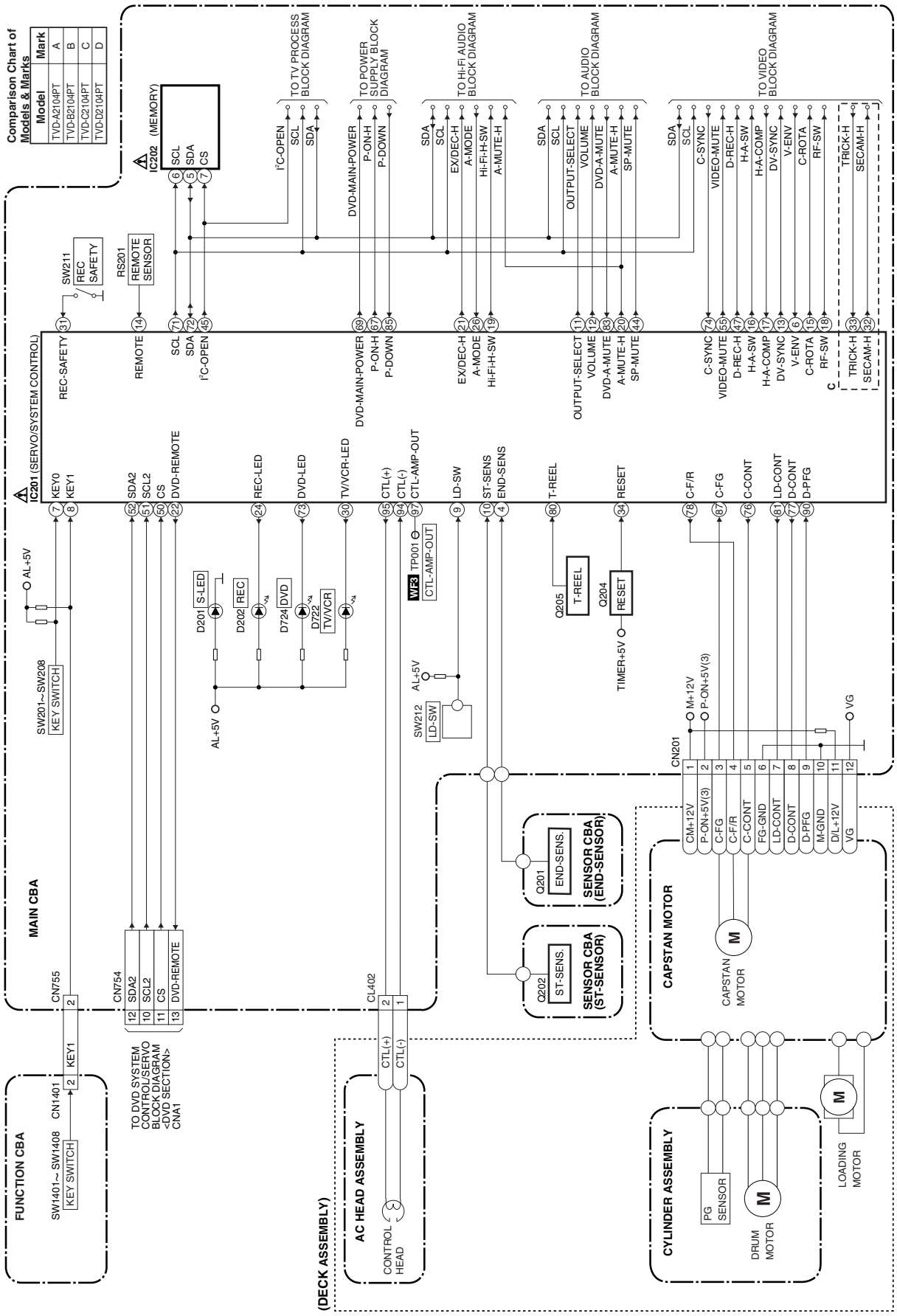
Fig. h

When “OK” appears on the screen, the factory default will be set. Then the firmware renewal mode is complete.

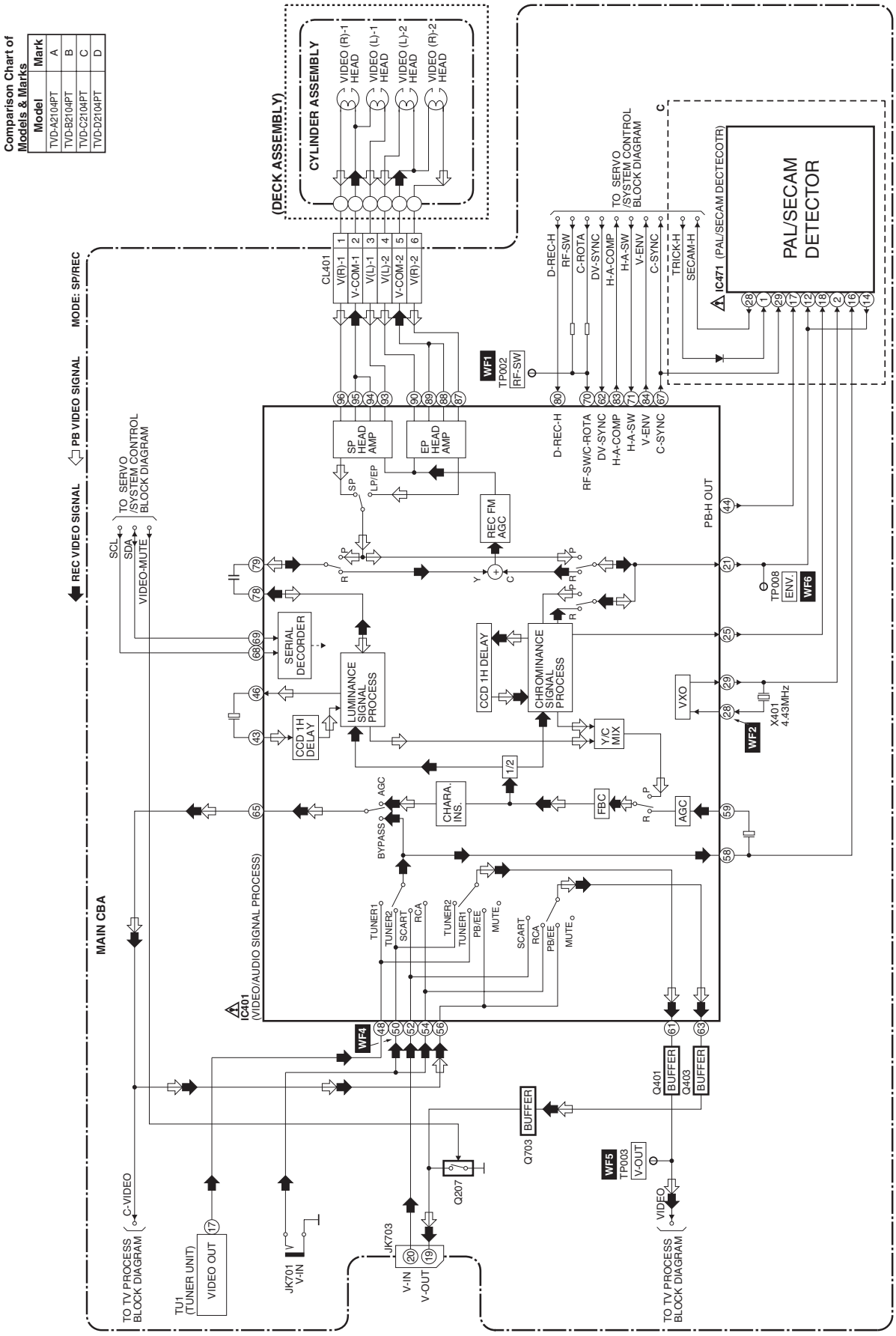
11. To exit this mode, press [CH UP/DOWN] or [SELECT] button to go to TV mode, or press [STANDBY] button to turn the power off.

BLOCK DIAGRAMS < TV/VCR Section >

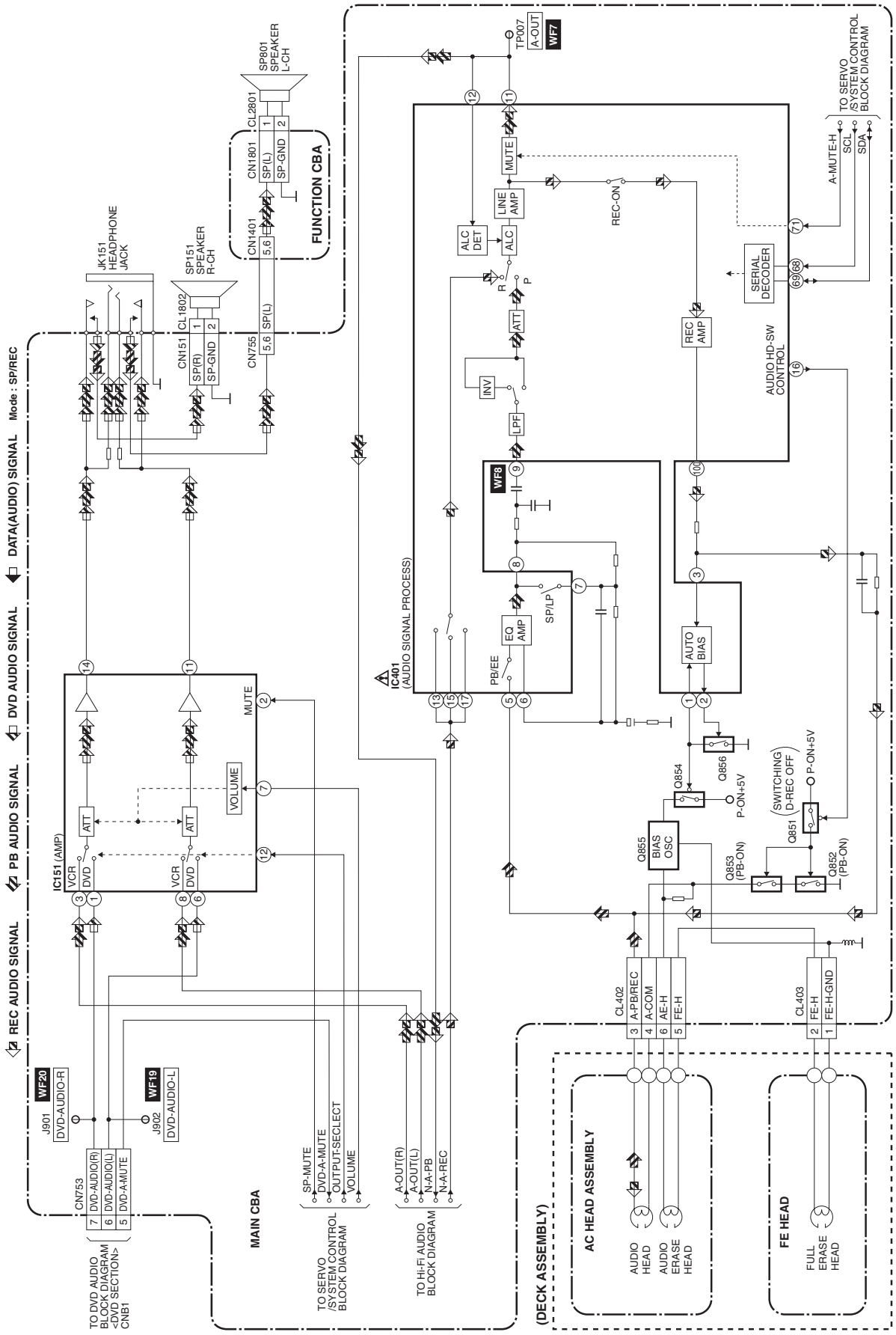
System Control / Servo Block Diagram



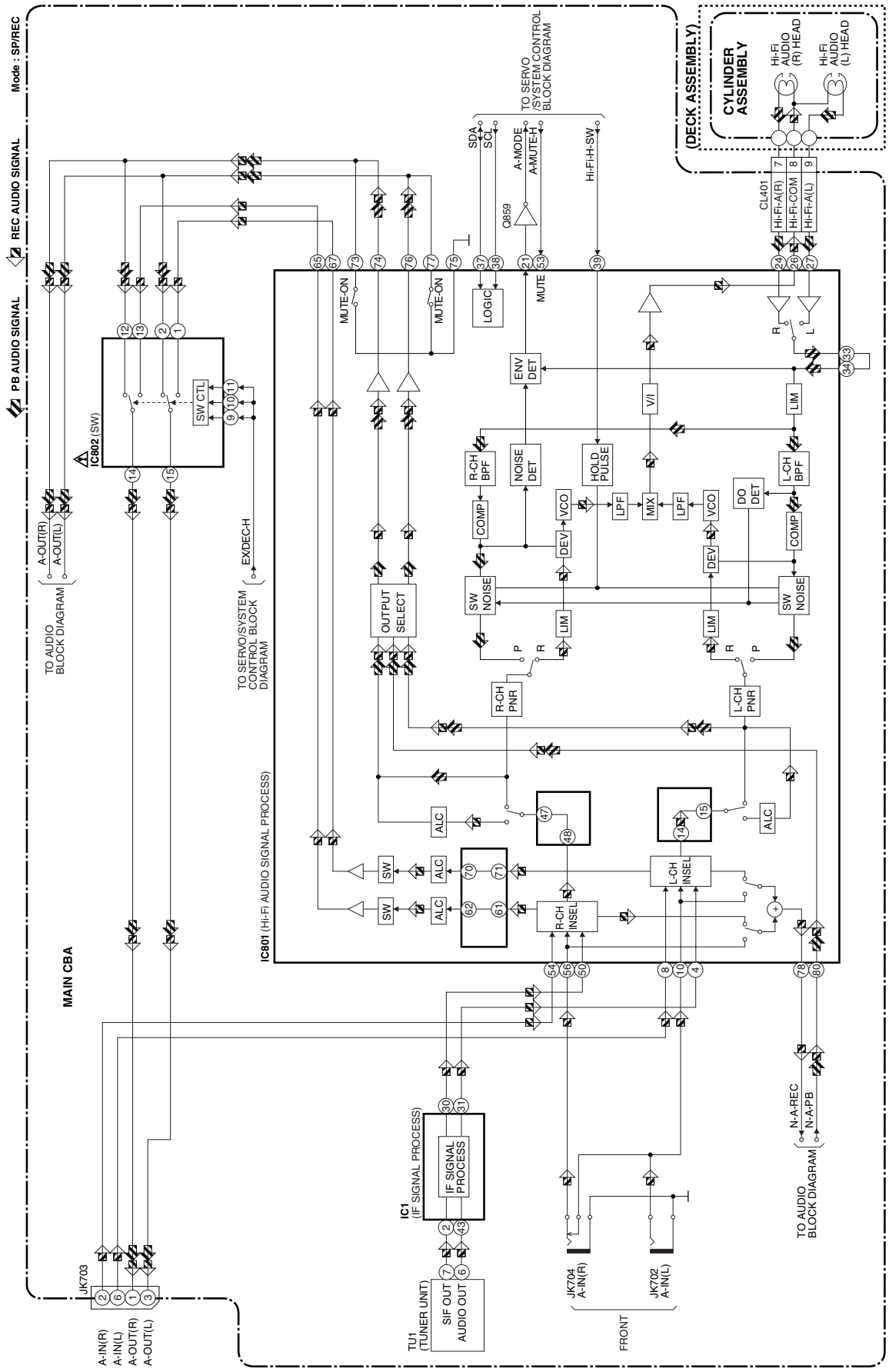
Video Block Diagram



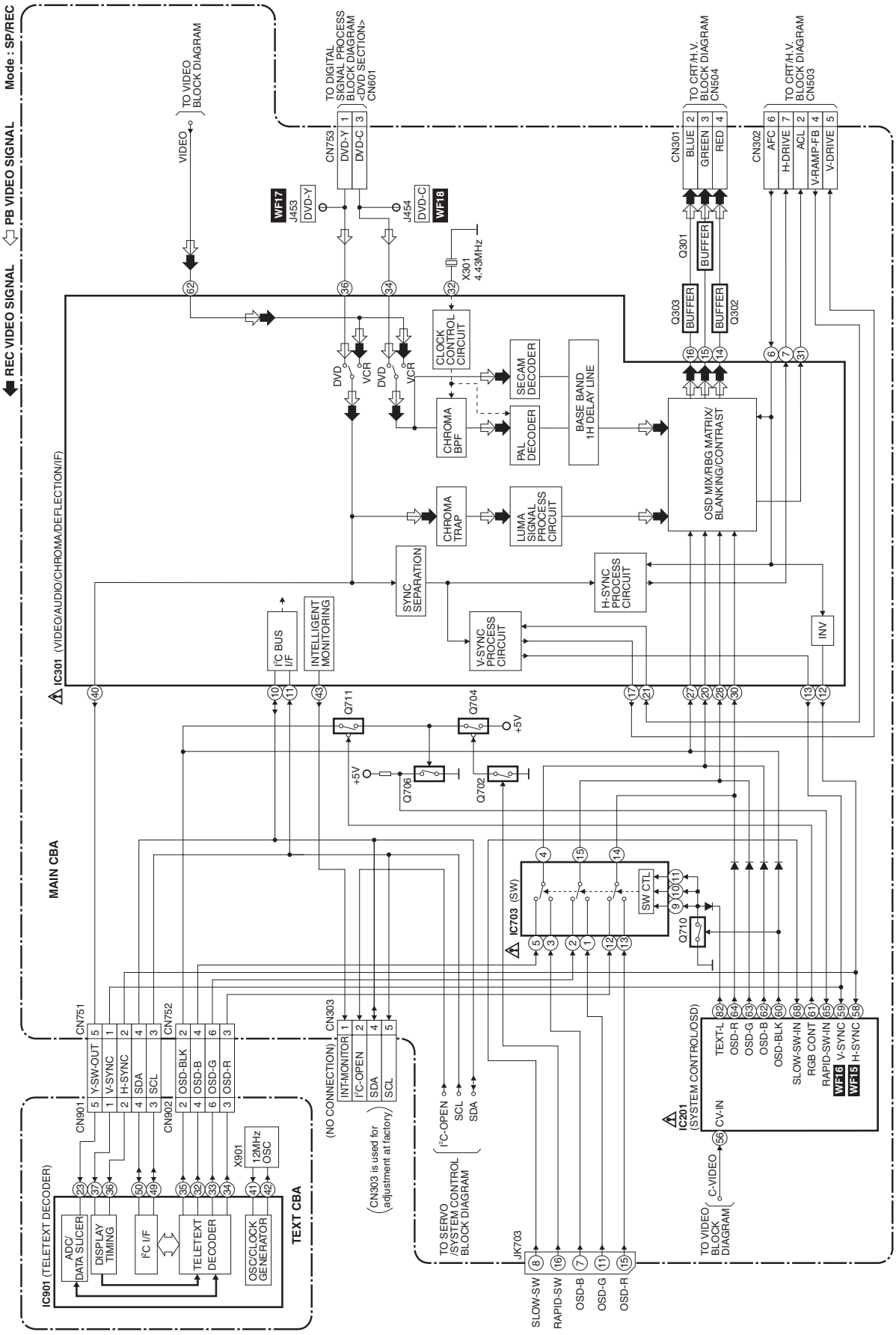
Audio Block Diagram



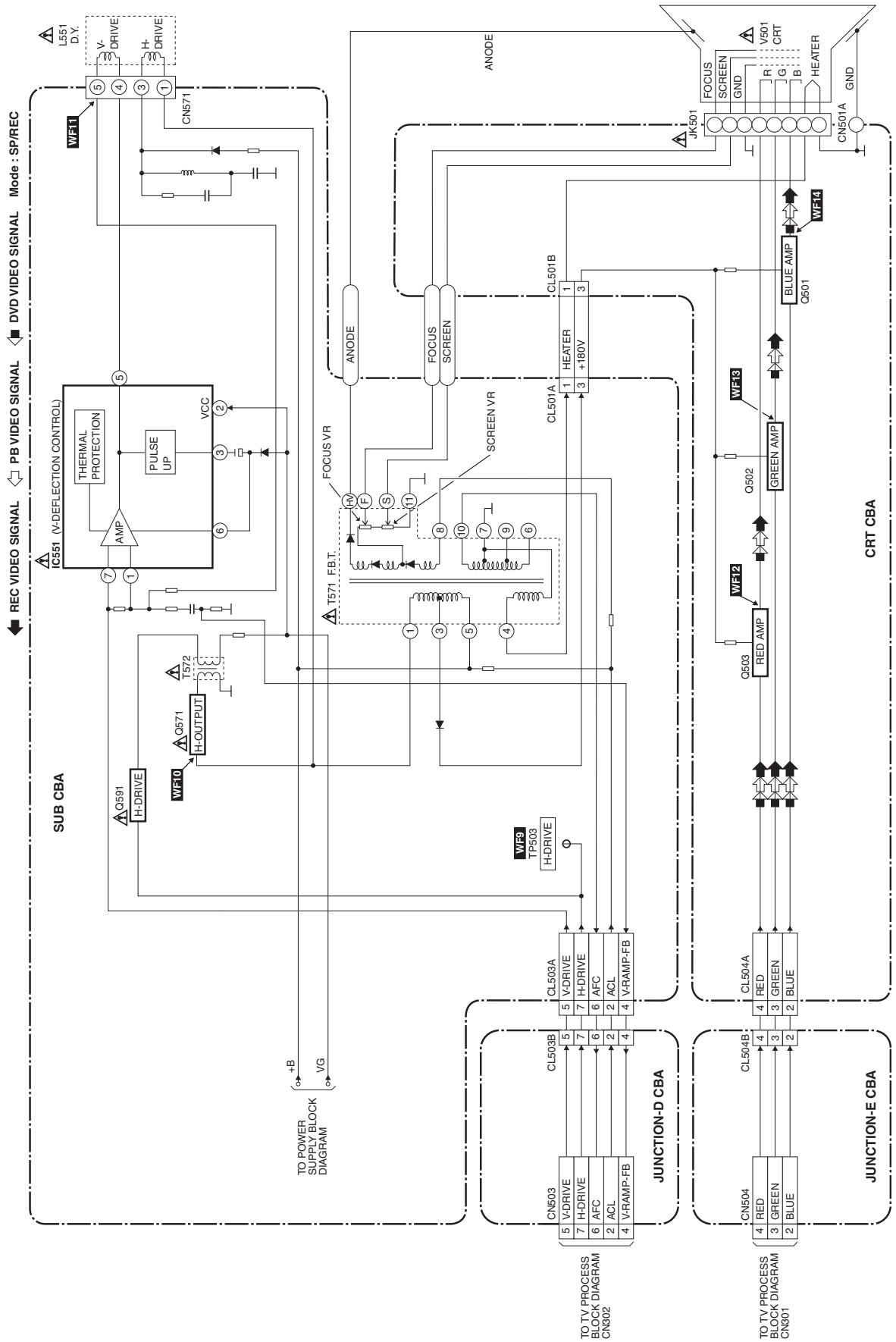
Hi-Fi Audio Block Diagram



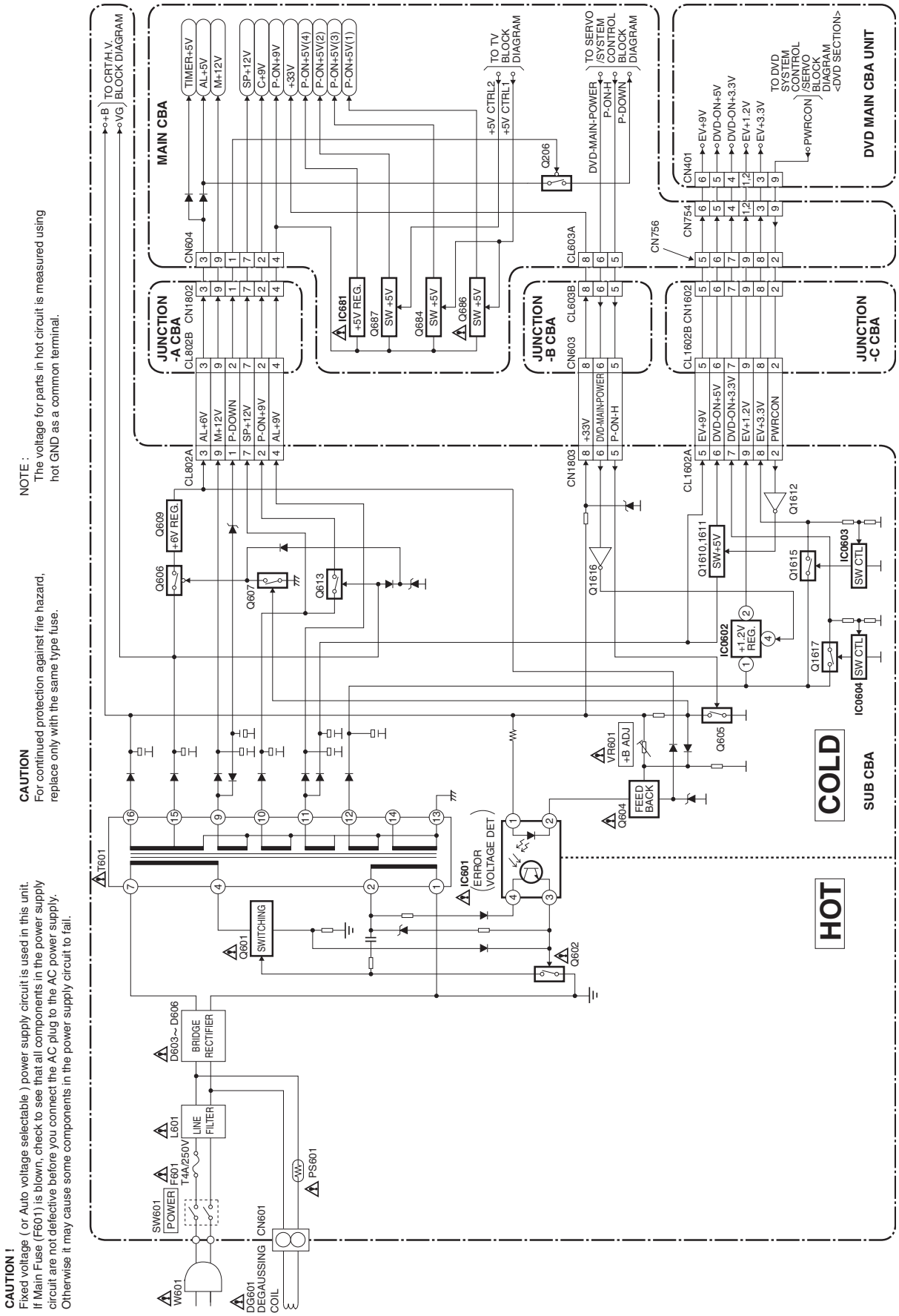
TV Process Block Diagram



CRT/H.V. Block Diagram

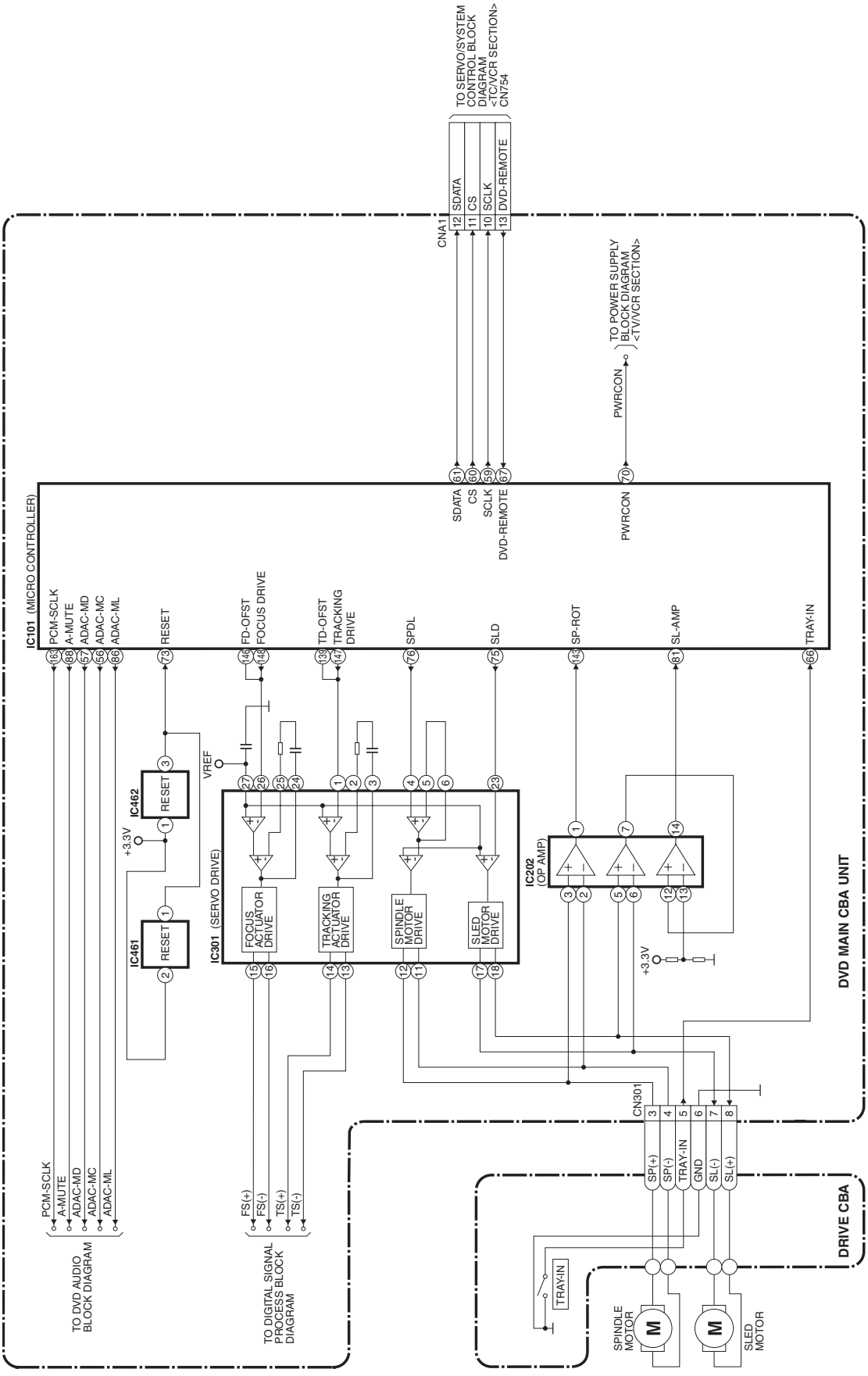


Power Supply Block Diagram

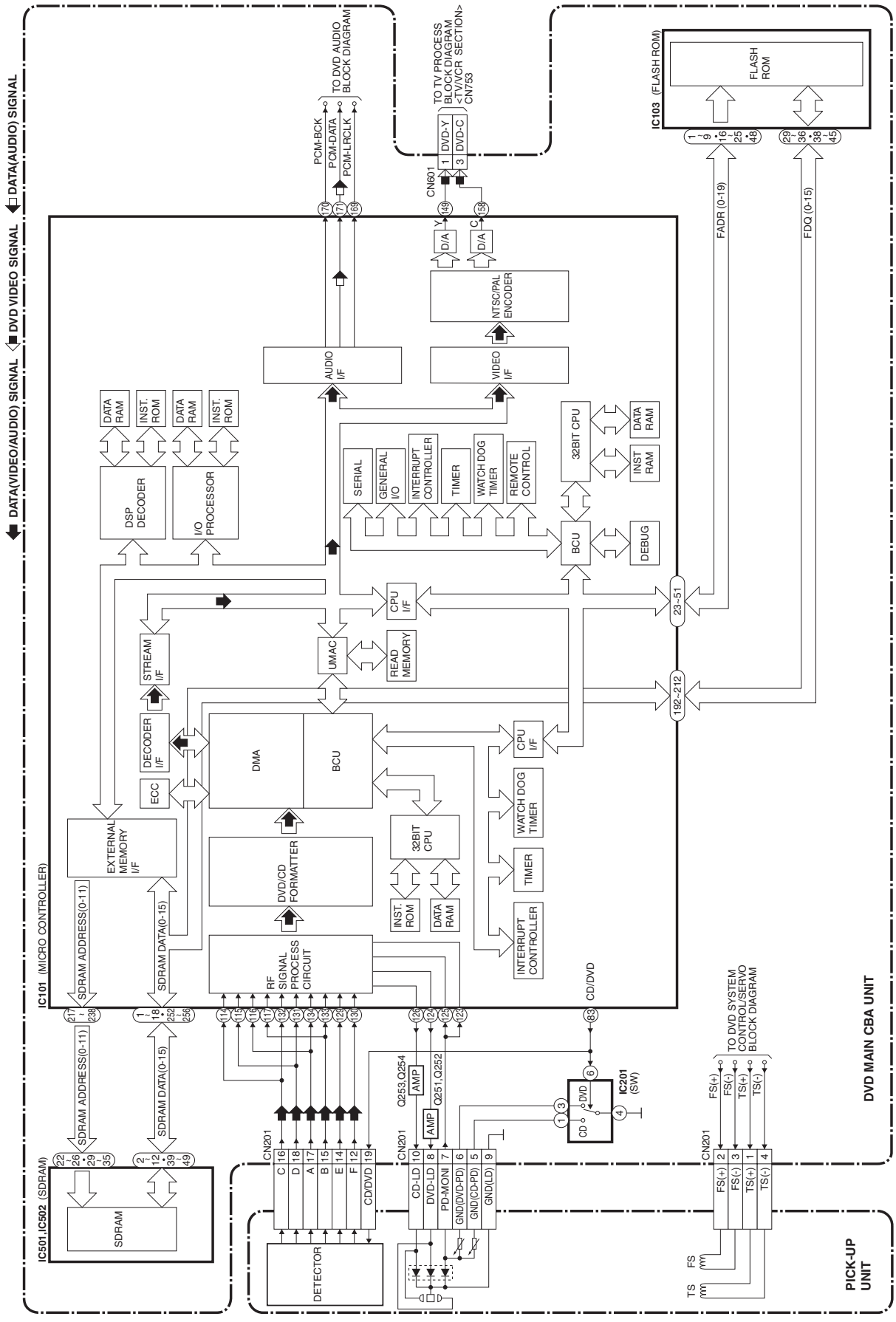


BLOCK DIAGRAMS < DVD Section >

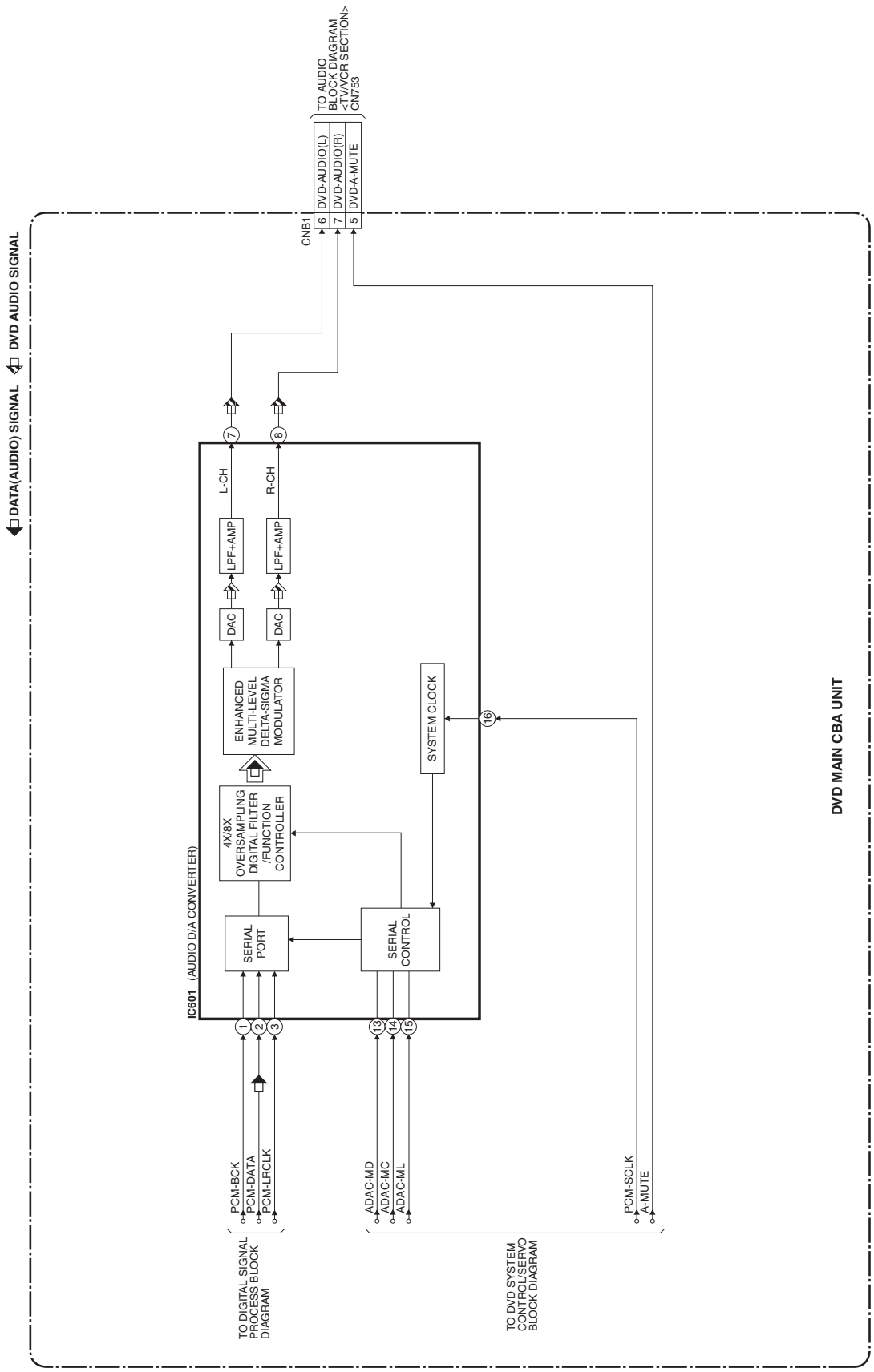
DVD System Control / Servo Block Diagram



Digital Signal Process Block Diagram



DVD Audio Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Warning

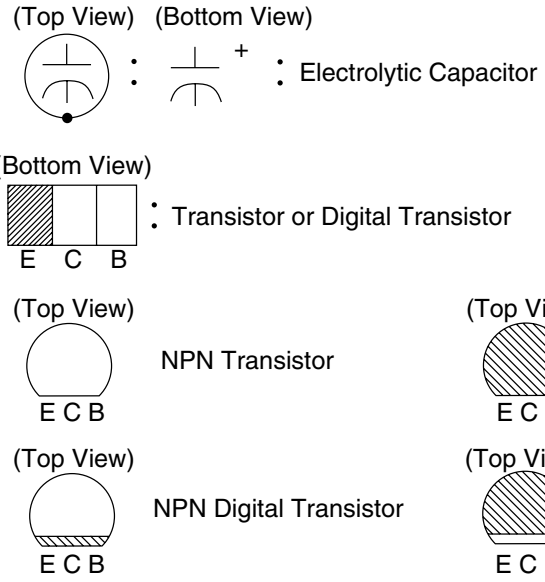
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special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

Capacitor Temperature Markings

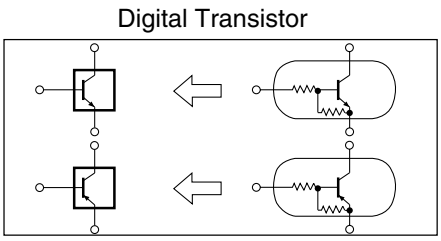
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

CBA Symbols



Schematic Diagram Symbols



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.

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 (F601) 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:**

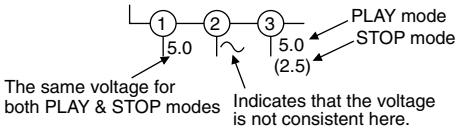
(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(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.

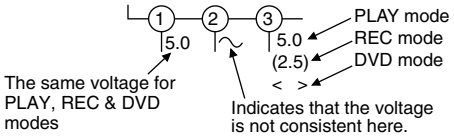
4. Mode: SP/REC

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

< DVD Section >

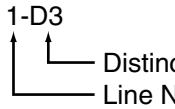


< TV/VCR Section >

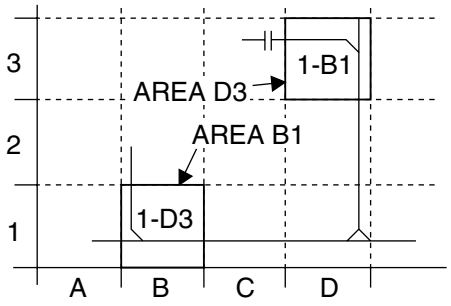


Unit: Volts

6. How to read converged lines



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



7. 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.

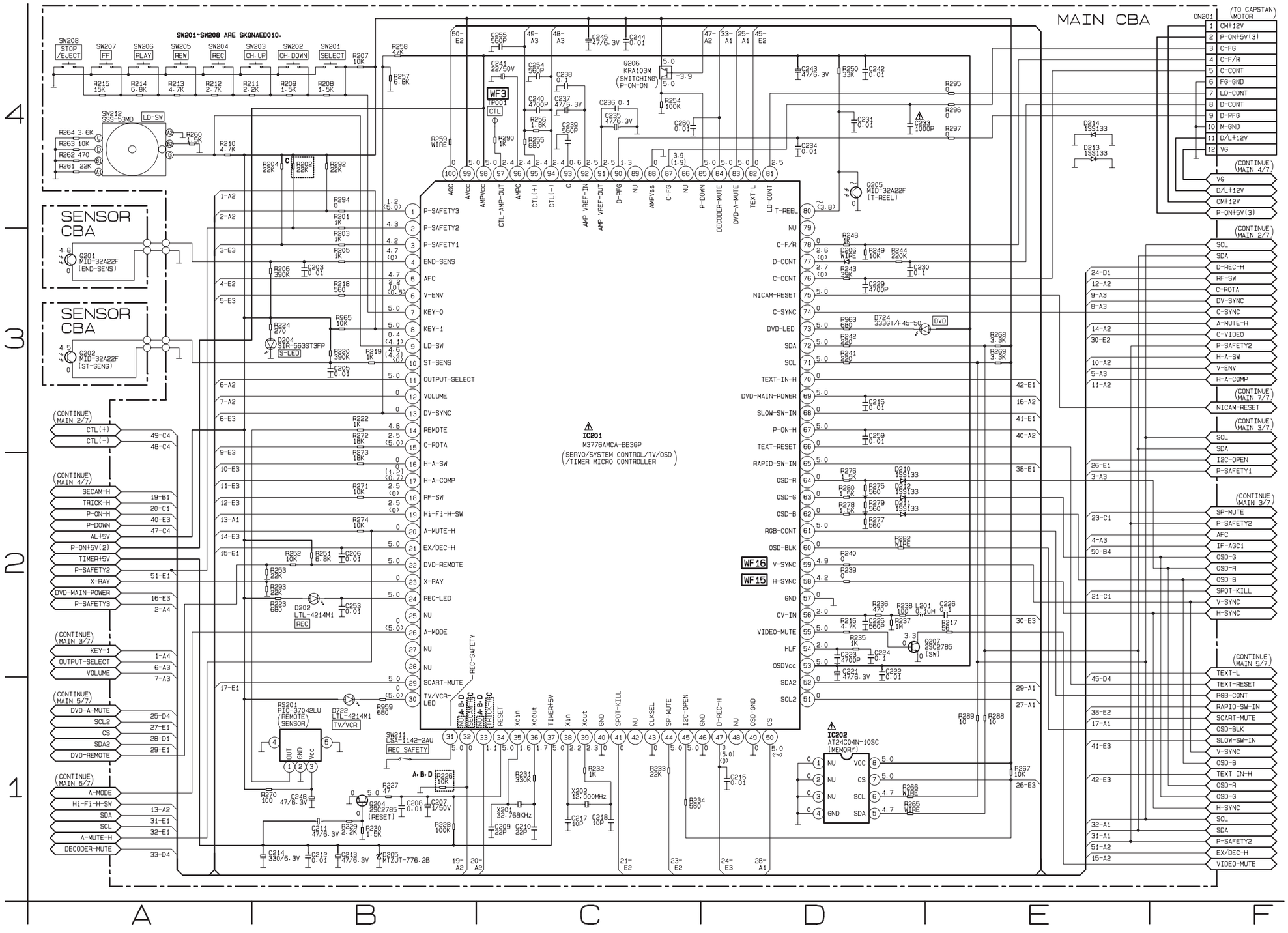
 : Used to indicate a test point with no test pin.

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

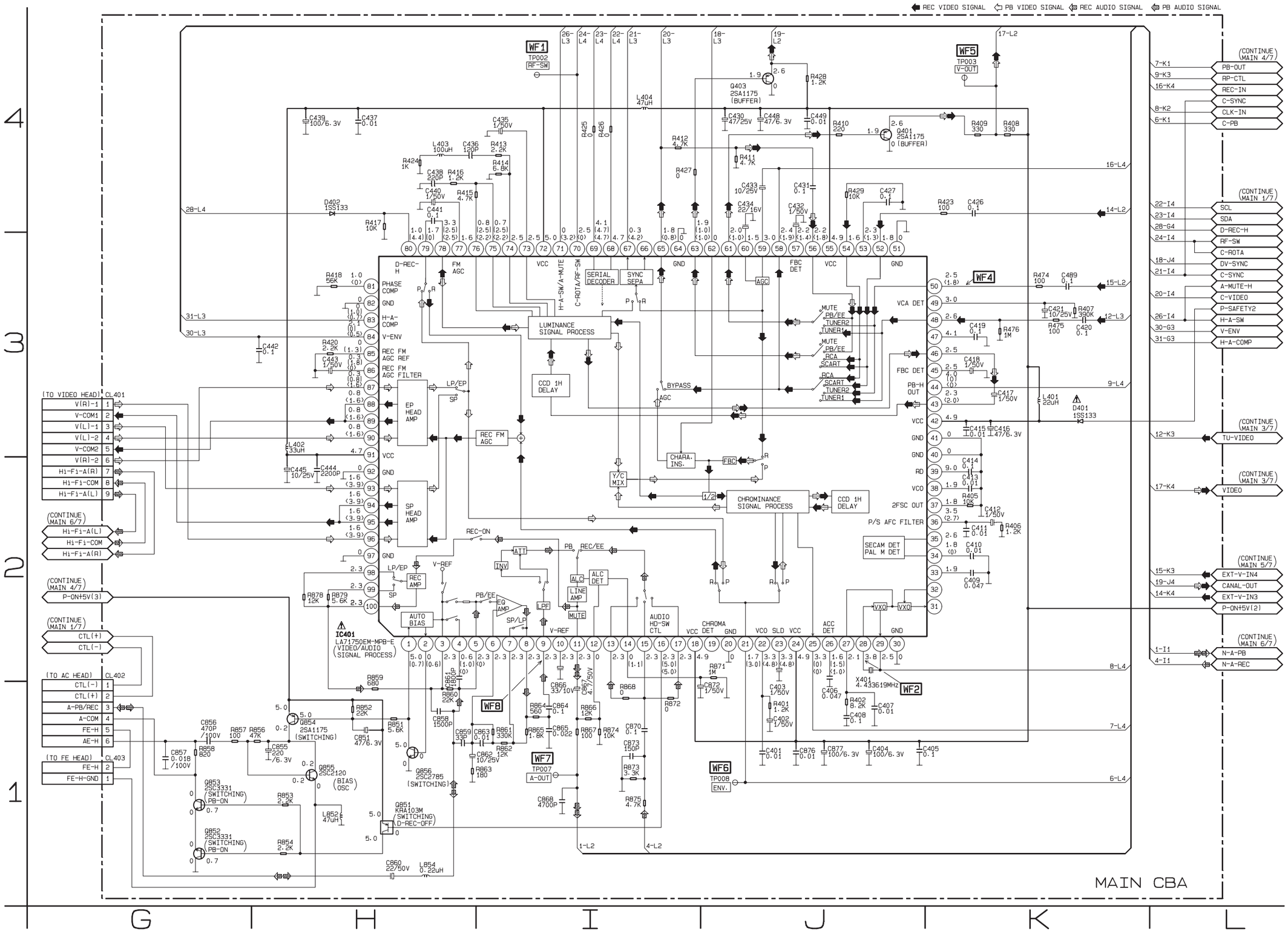
Main 1/7 Schematic Diagram < TV/VCR Section >

Comparison Chart of Models and Marks

MODEL	MARK
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D



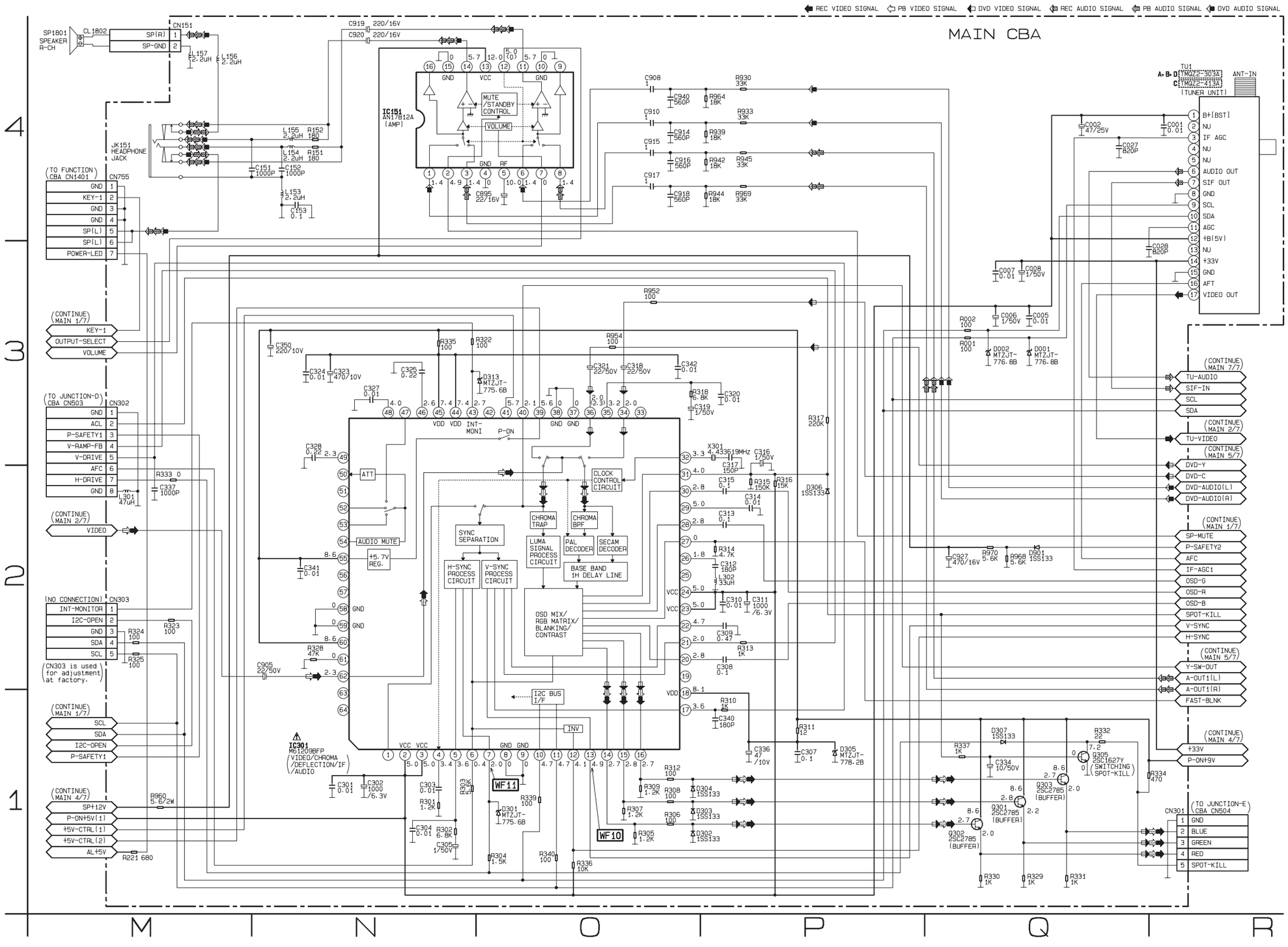
Main 2/7 Schematic Diagram < TV/VCR Section >



Main 3/7 Schematic Diagram < TV/VCR Section >

Comparison Chart of Models and Marks

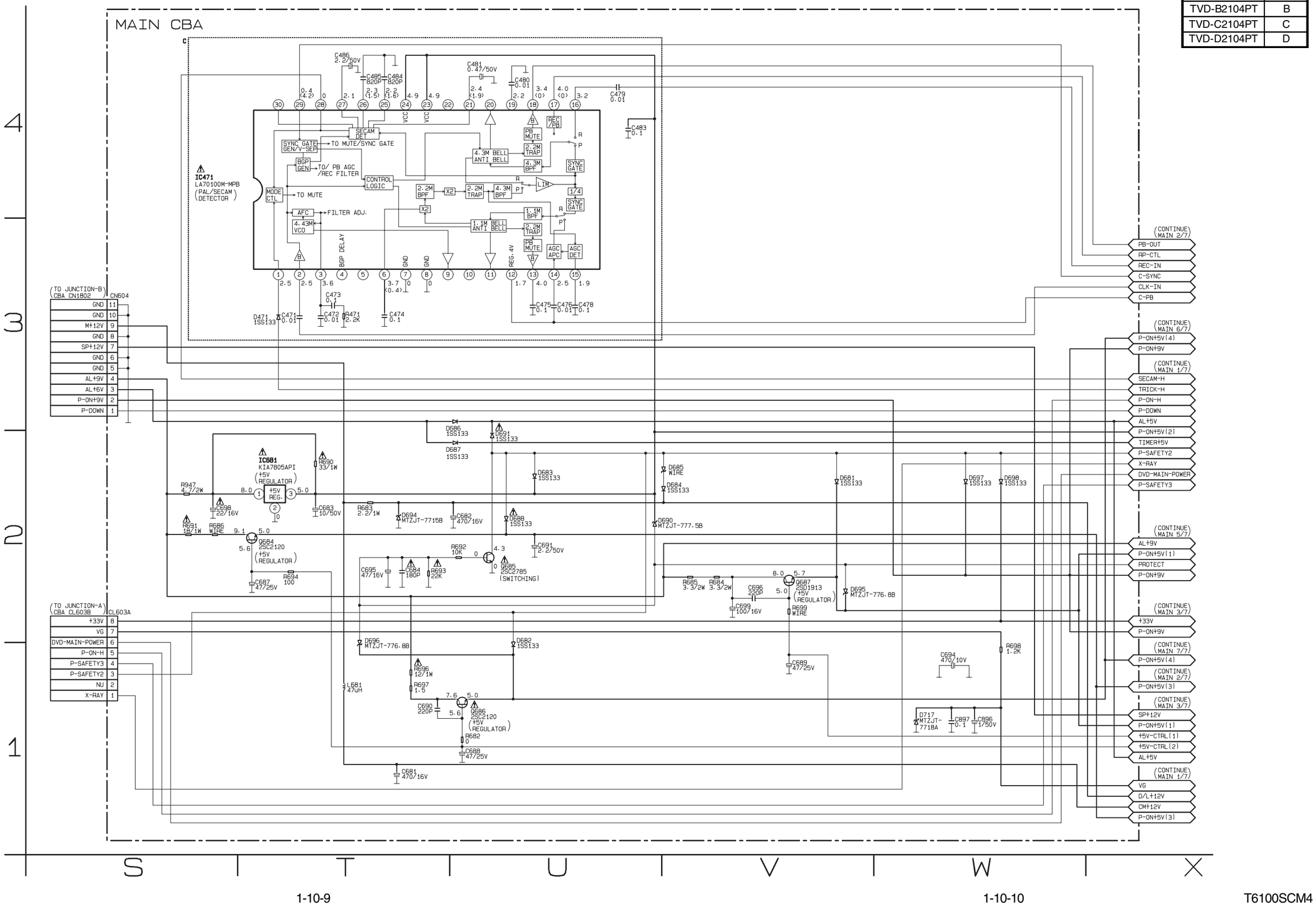
MODEL	MARK
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D



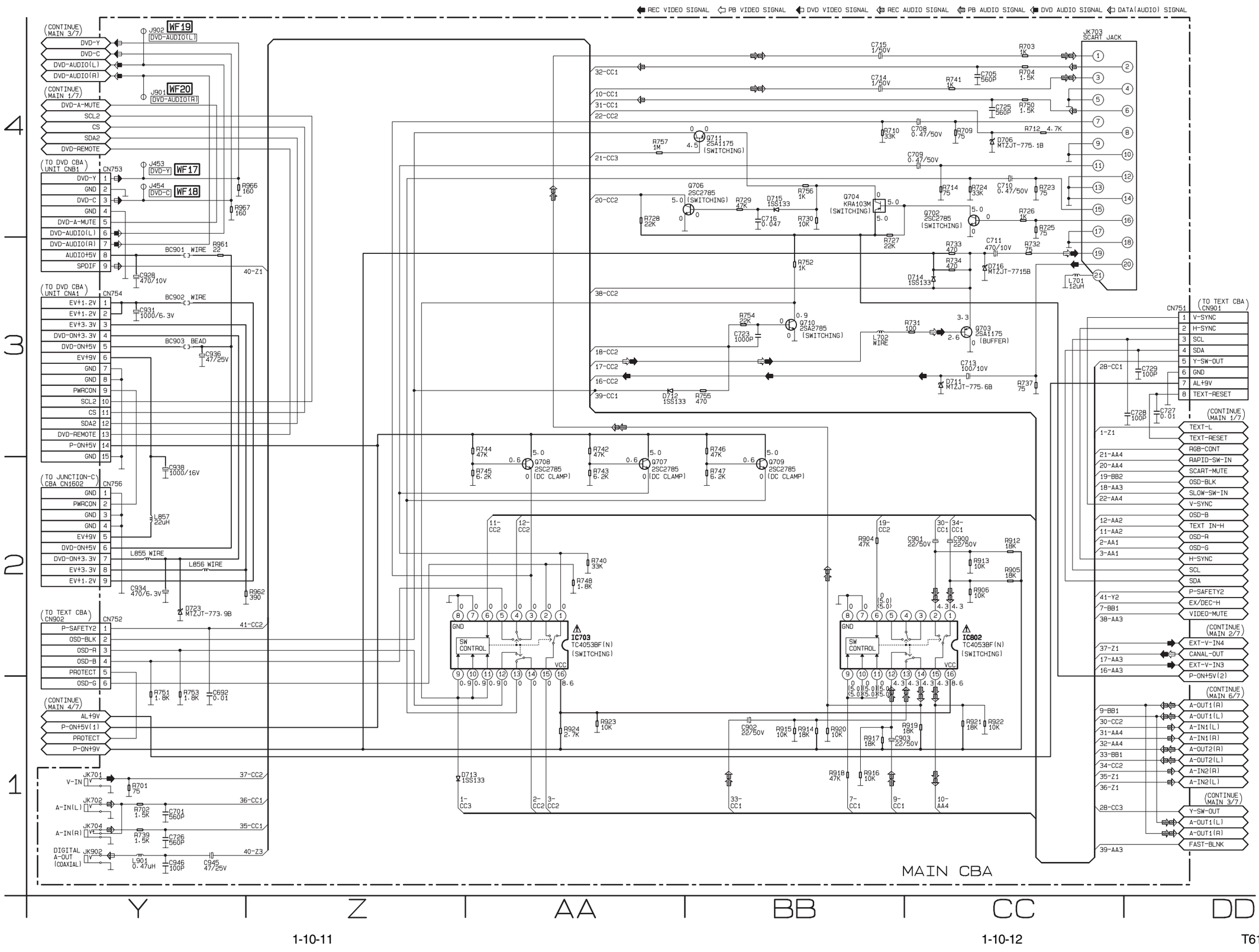
Main 4/7 Schematic Diagram < TV/VCR Section >

Comparison Chart of Models and Marks

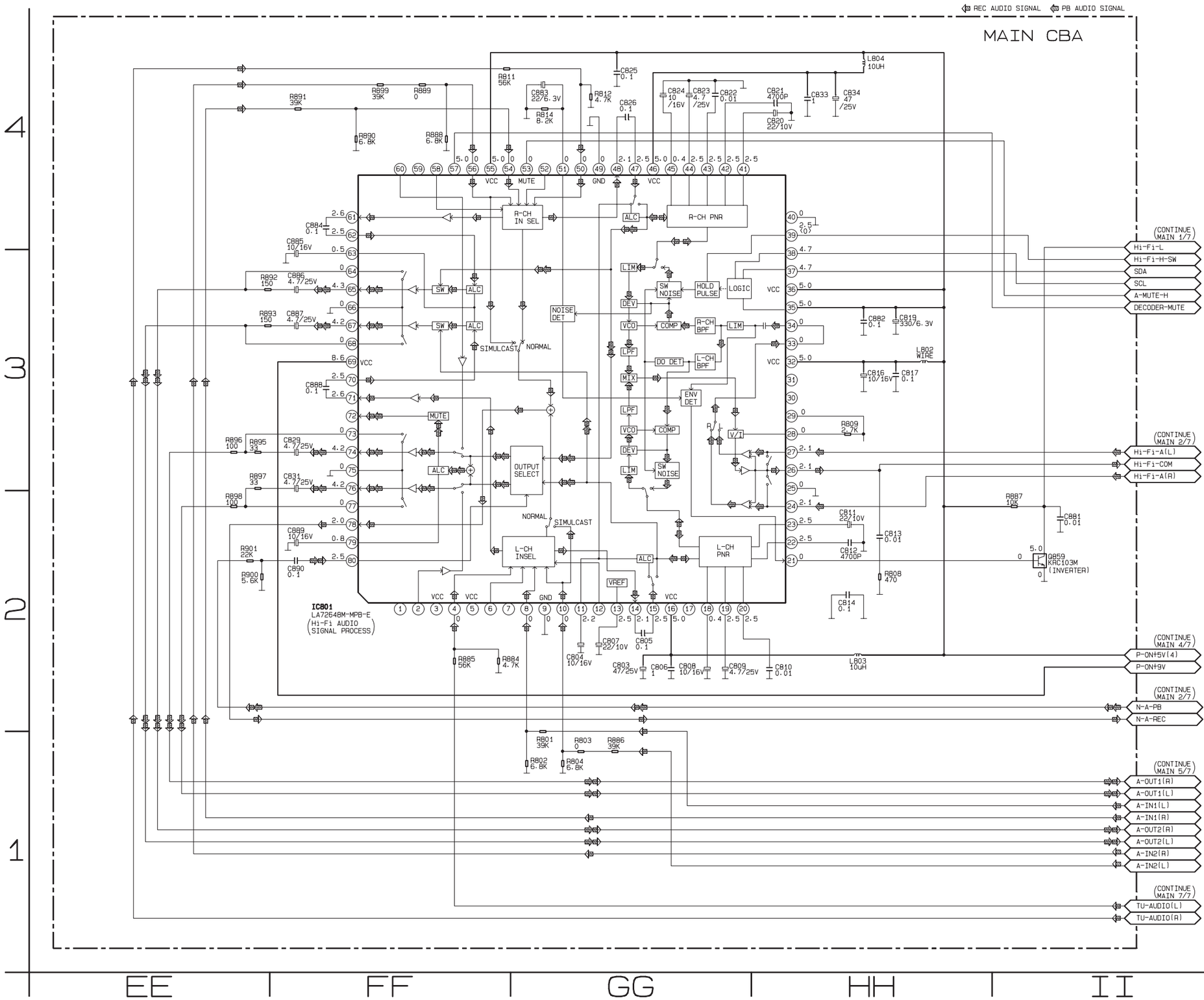
MODEL	MARK
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D



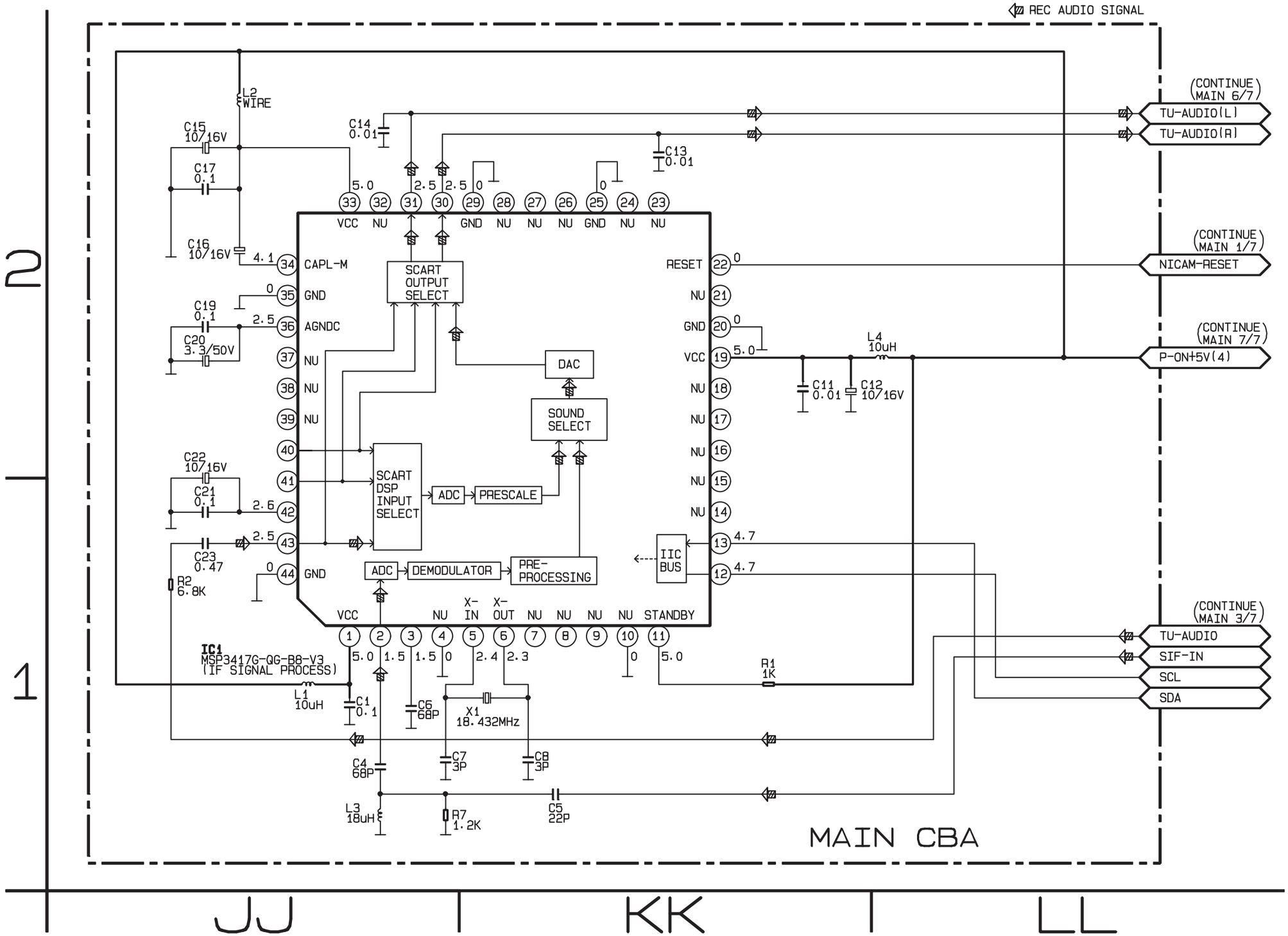
Main 5/7 Schematic Diagram < TV/VCR Section >



Main 6/7 Schematic Diagram < TV/VCR Section >



Main 7/7 Schematic Diagram < TV/VCR Section >



Sub 1/3 Schematic Diagram < TV/VCR Section >

Comparison Chart of Models and Marks

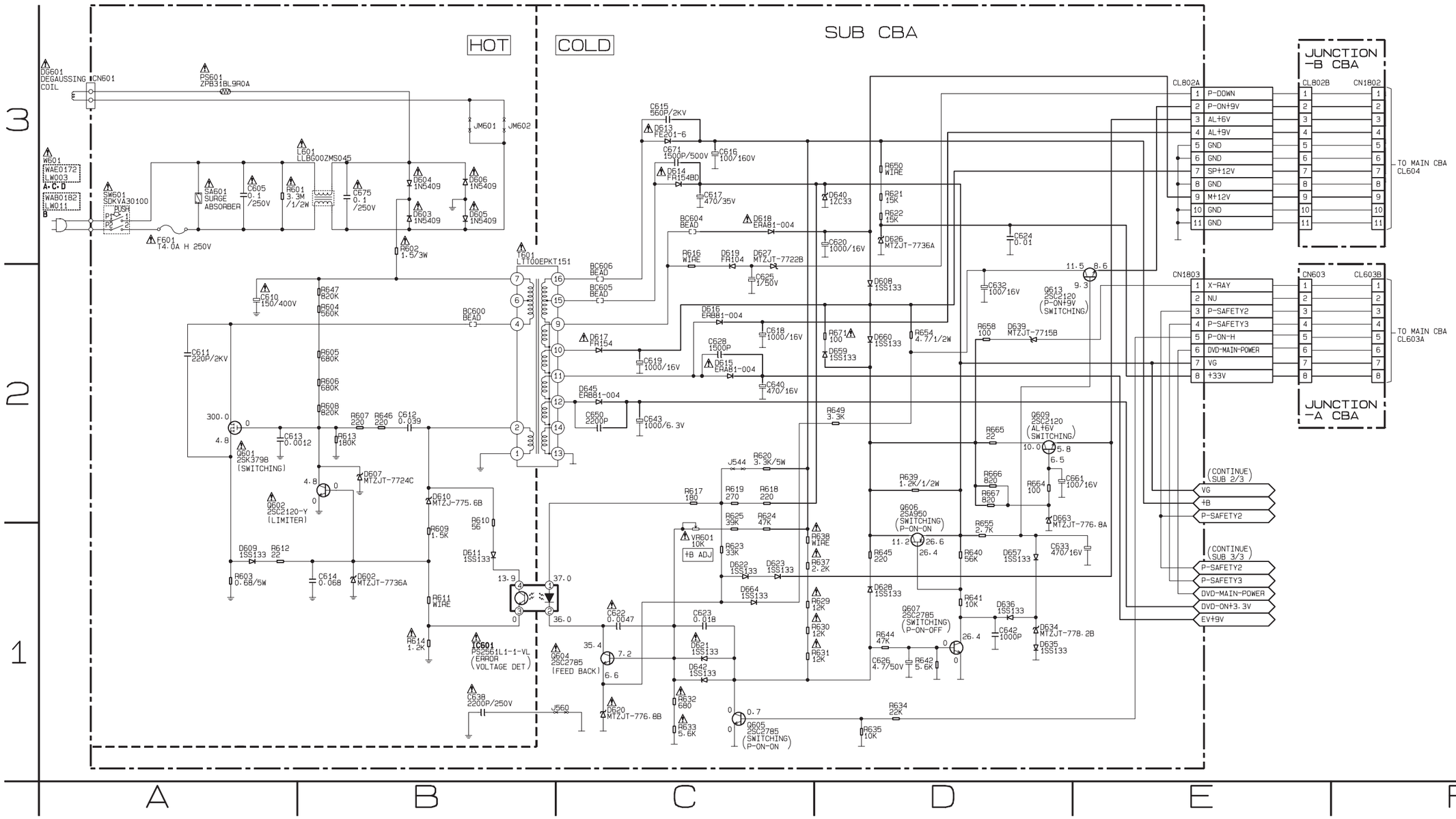
MODEL	MARK
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D

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

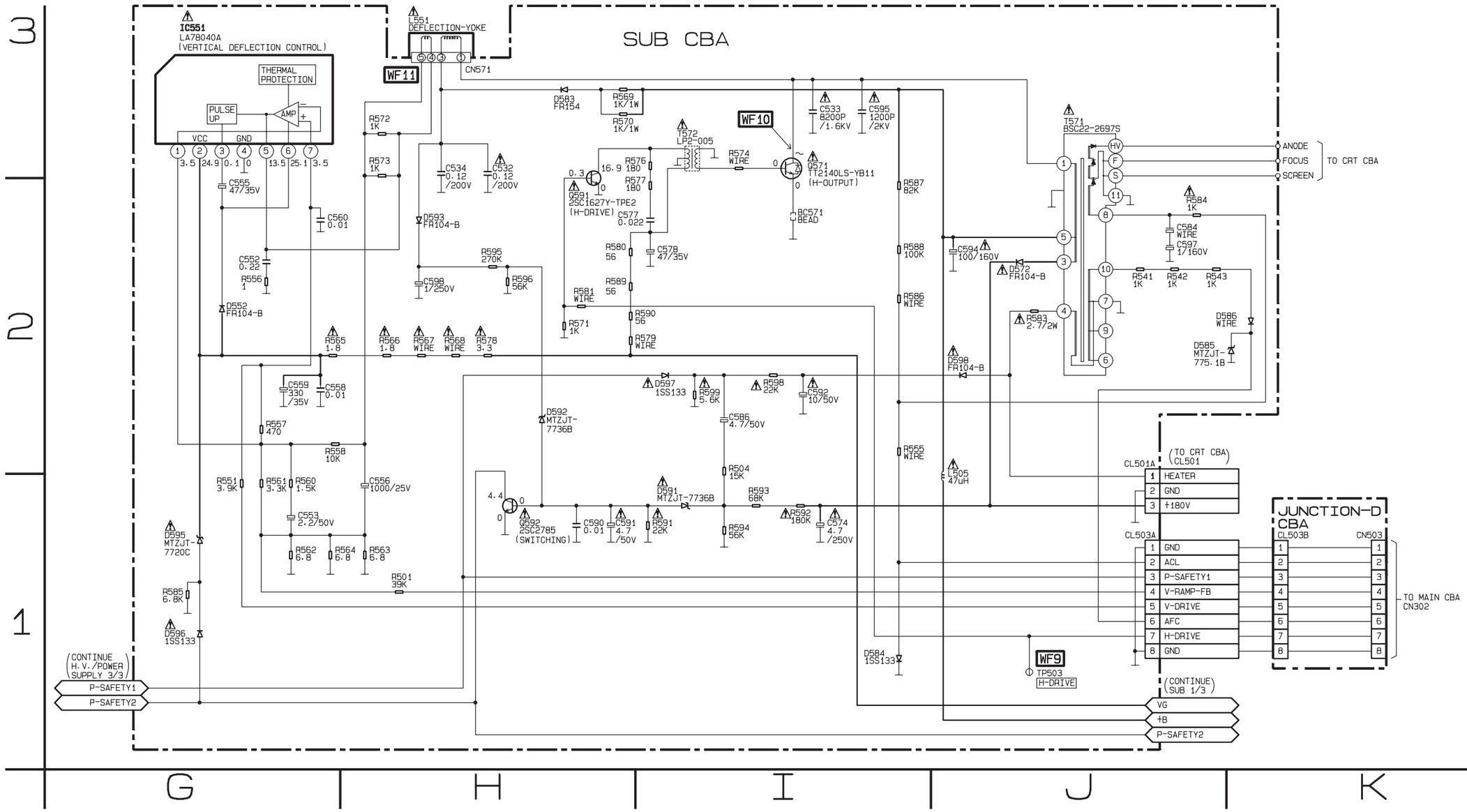
CAUTION
For continued protection against fire hazard, replace only with the same type fuse.

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

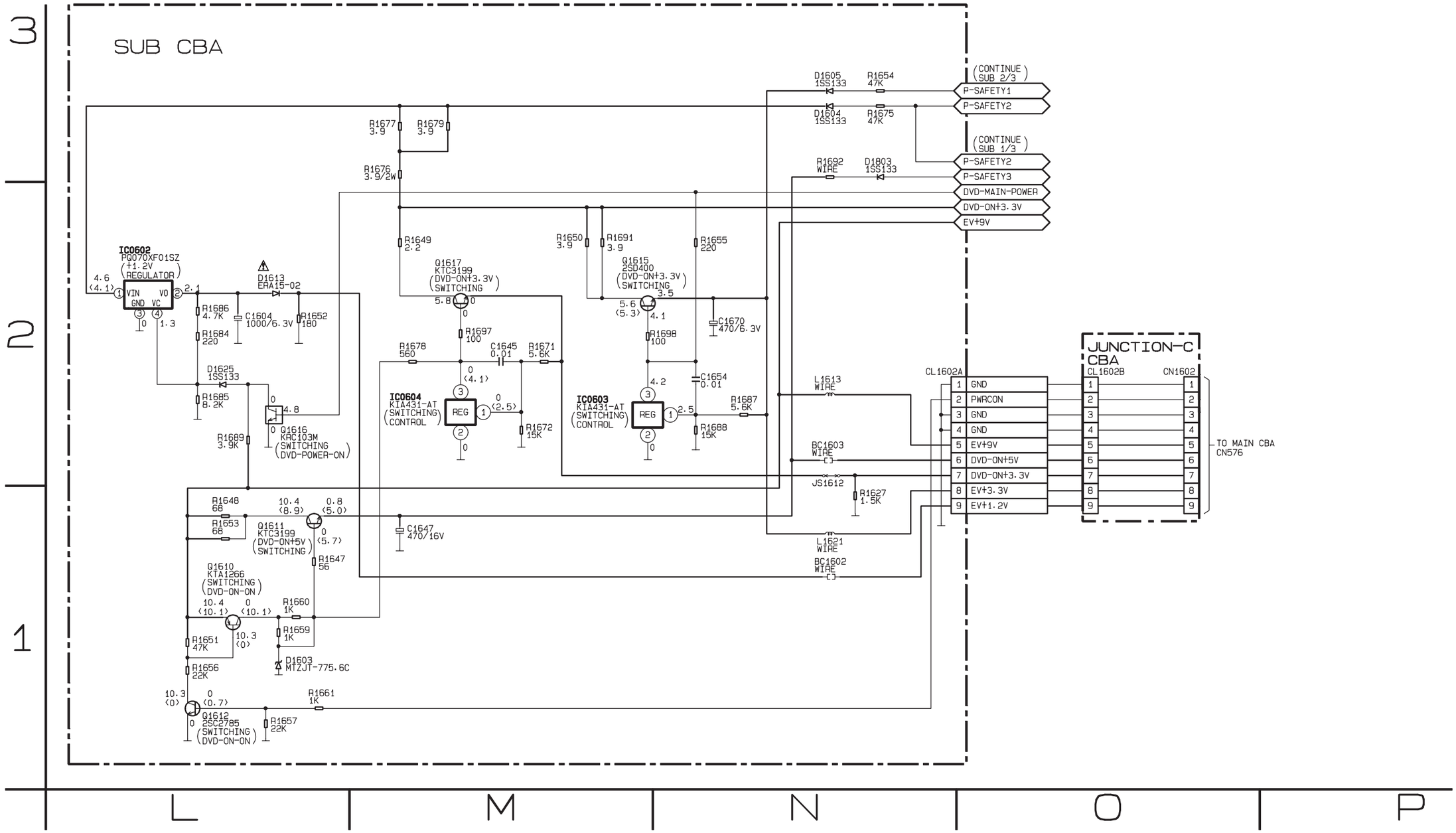
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



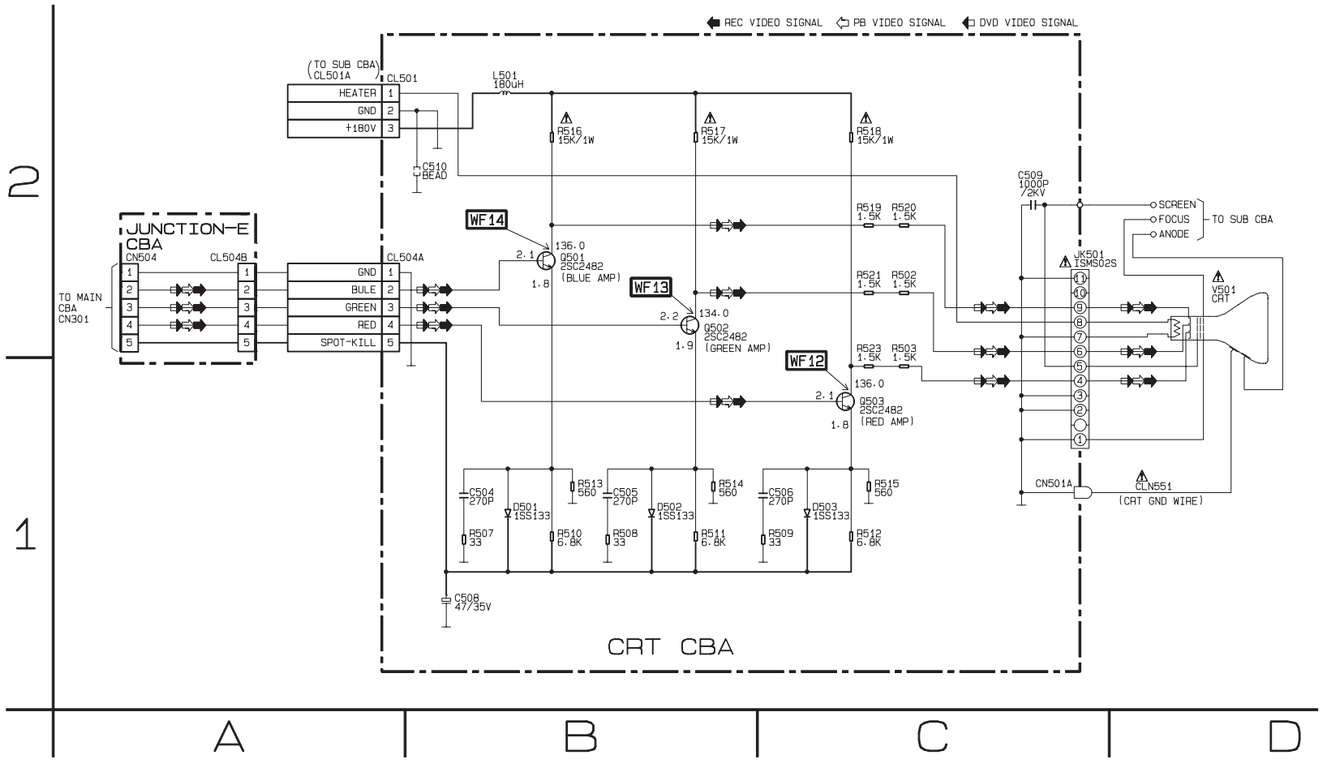
Sub 2/3 Schematic Diagram < TV/VCR Section >



Sub 3/3 Schematic Diagram < TV/VCR Section >

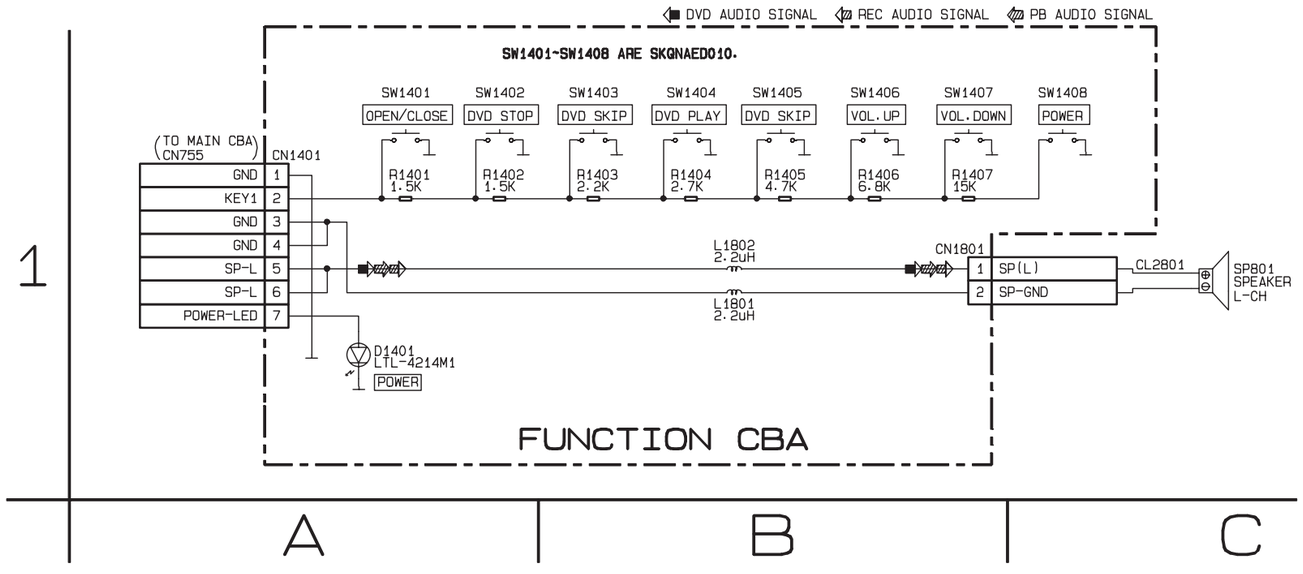


CRT Schematic Diagram < TV/VCR Section >



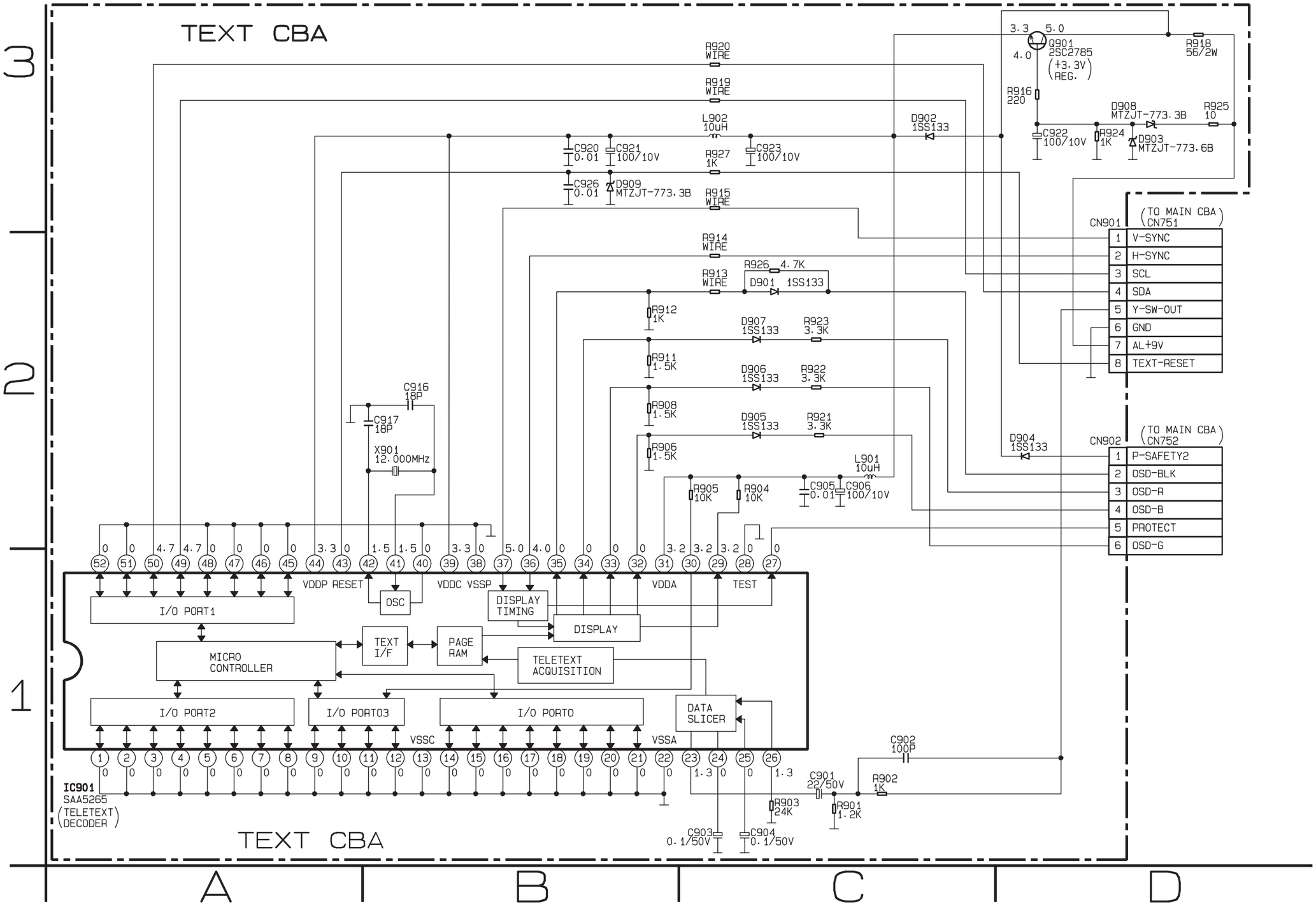
T6100SCCRT

Function Schematic Diagram < TV/VCR Section >

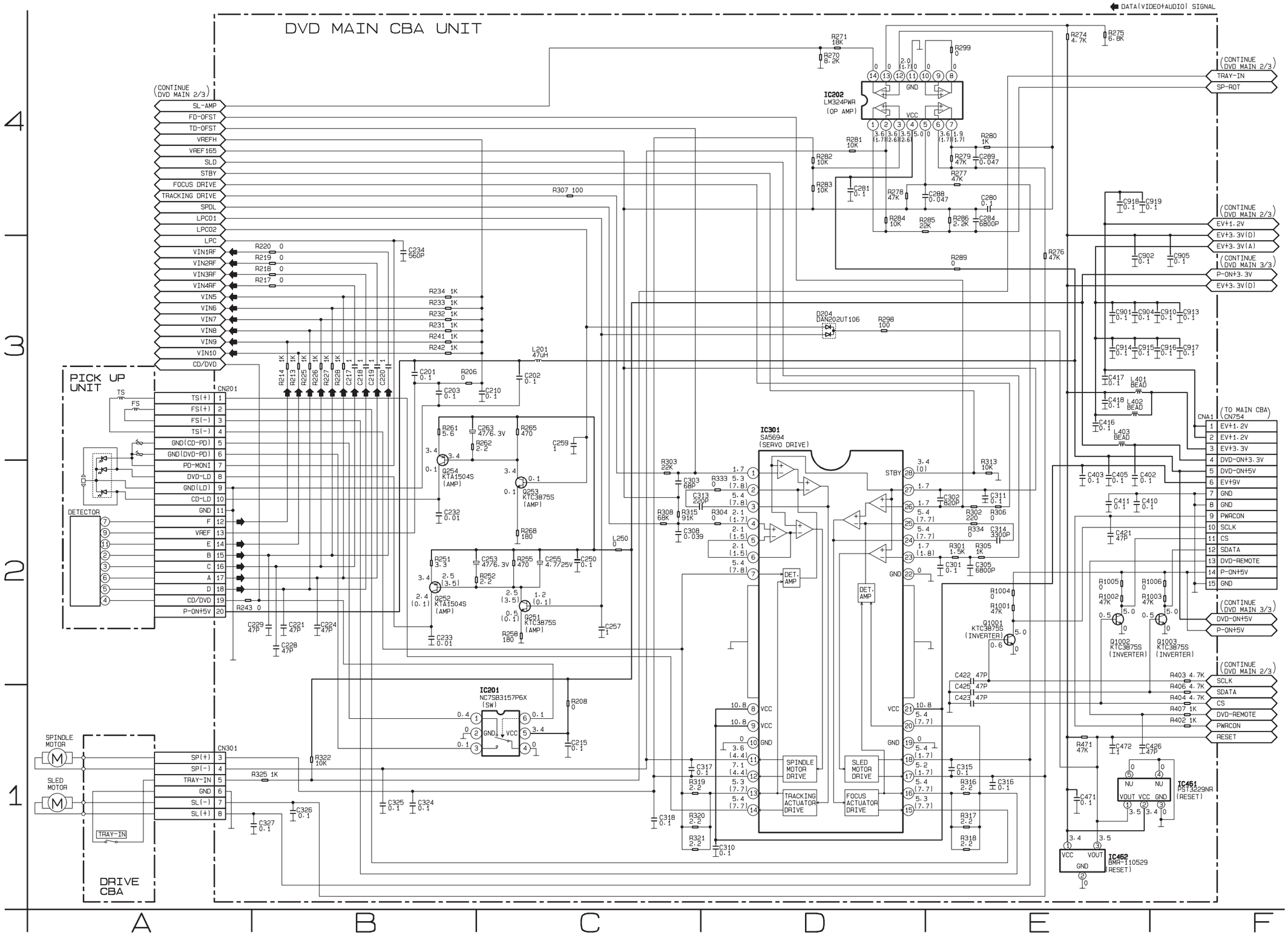


T6100SCF

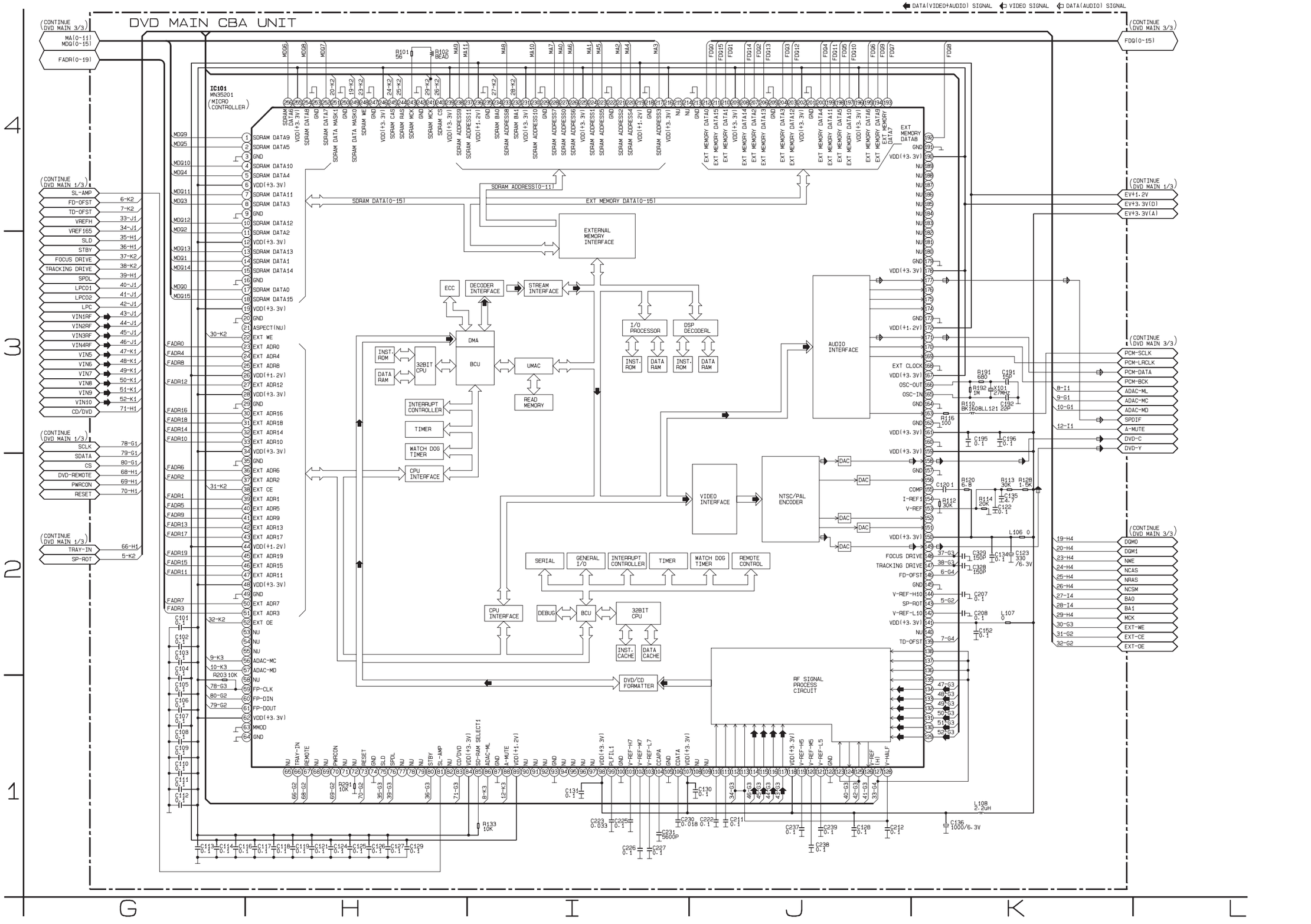
Text Schematic Diagram < TV/VCR Section >



DVD Main 1/3 Schematic Diagram < DVD Section >



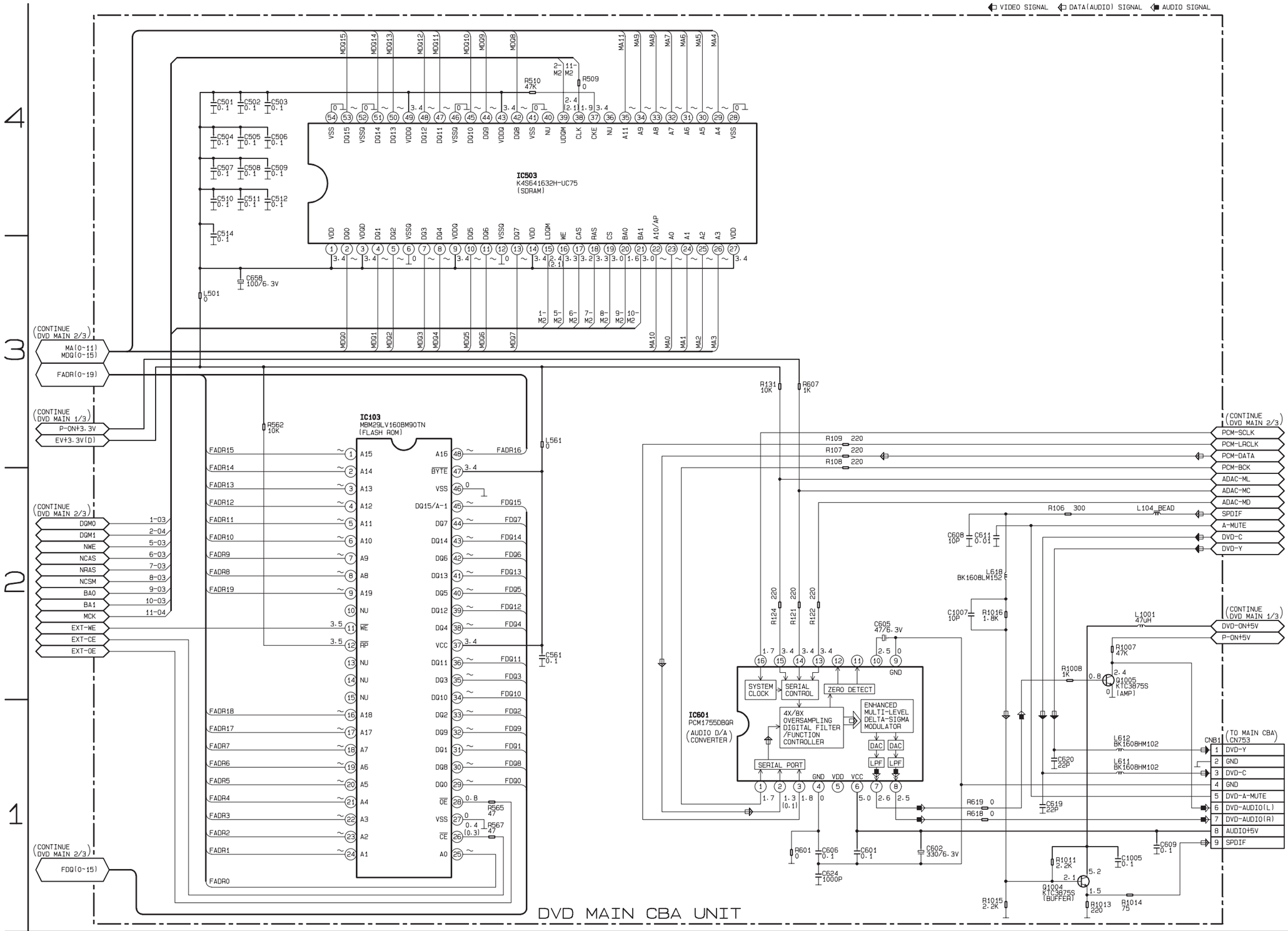
DVD Main 2/3 Schematic Diagram < DVD Section >



IC101 VOLTAGE CHART

PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	~	~	33	~	~	65	-----	-----	97	-----	-----	129	2.3	2.3	161	3.4	3.4	193	~	~	225	3.4	3.4
2	~	~	34	3.4	3.4	66	3.4	3.5	98	3.4	3.4	130	2.3	2.3	162	0	0	194	~	~	226	~	~
3	0	0	35	0	0	67	3.2	3.2	99	0.9	0.8	131	2.3	2.3	163	1.8	1.8	195	~	~	227	~	~
4	~	~	36	~	~	68	-----	-----	100	0	0	132	2.4	2.3	164	0	0	196	3.4	3.4	228	~	~
5	~	~	37	~	~	69	-----	-----	101	2.4	2.4	133	2.4	2.4	165	1.7	1.8	197	~	~	229	0	0
6	3.4	3.4	38	0.4	0.3	70	3.4	3.4	102	2.2	2.2	134	2.4	2.4	166	1.7	1.7	198	~	~	230	~	~
7	~	~	39	~	~	71	-----	-----	103	1.9	1.9	135	2.3	2.3	167	3.4	3.4	199	~	~	231	3.4	3.4
8	~	~	40	~	~	72	1.4	2.7	104	0.4	0.3	136	2.3	2.3	168	0	0	200	~	~	232	1.3	1.6
9	0	0	41	~	~	73	3.4	3.4	105	0	0	137	2.3	2.3	169	1.8	1.8	201	0	0	233	~	~
10	~	~	42	~	~	74	0	0	106	1.7	1.7	138	2.3	2.3	170	1.7	1.7	202	3.4	3.4	234	1.9	2.3
11	~	~	43	~	~	75	1.7	1.8	107	3.4	3.4	139	1.7	1.7	171	1.3	0.1	203	~	~	235	0	0
12	3.4	3.4	44	1.3	1.3	76	2.3	1.8	108	-----	-----	140	-----	-----	172	1.3	1.3	204	~	~	236	1.3	1.3
13	~	~	45	~	~	77	-----	-----	109	-----	-----	141	3.4	3.4	173	0	0	205	0	0	237	~	~
14	~	~	46	~	~	78	-----	-----	110	1.9	1.9	142	1.3	1.3	174	-----	-----	206	~	~	238	~	~
15	~	~	47	~	~	79	-----	-----	111	1.9	1.9	143	2.1	1.7	175	-----	-----	207	~	~	239	3.4	3.4
16	0	0	48	3.4	3.4	80	3.4	0.1	112	1.7	1.7	144	2.2	2.2	176	-----	-----	208	~	~	240	3.4	3.3
17	~	~	49	0	0	81	0.1	0.1	113	1.7	1.7	145	0	0	177	1.8	1.7	209	3.4	3.4	241	1.9	1.9
18	~	~	50	~	~	82	-----	-----	114	1.7	1.7	146	1.7	1.7	178	3.4	3.5	210	~	~	242	0	0
19	3.4	3.4	51	~	~	83	0.1	0.1	115	1.7	1.7	147	1.8	1.7	179	0	0	211	~	~	243	1.9	1.9
20	0	0	52	0.8	0.8	84	3.4	3.4	116	1.7	1.7	148	1.7	1.7	180	-----	-----	212	~	~	244	3.4	3.3
21	-----	-----	53	-----	-----	85	0.1	0.1	117	1.7	1.7	149	0.6	0.5	181	-----	-----	213	0	0	245	3.4	3.4
22	3.5	3.5	54	-----	-----	86	3.6	3.4	118	3.4	3.4	150	3.4	3.4	182	-----	-----	214	2.5	3.0	246	3.4	3.4
23	~	~	55	-----	-----	87	0	0	119	2.0	2.0	151	-----	-----	183	-----	-----	215	2.5	3.0	247	0	0
24	~	~	56	3.4	3.4	88	3.5	0.1	120	1.7	1.7	152	-----	-----	184	-----	-----	216	3.4	3.4	248	3.3	3.4
25	~	~	57	3.5	3.5	89	1.3	1.3	121	1.5	1.5	153	1.4	1.3	185	-----	-----	217	~	~	249	3.2	3
26	1.3	1.3	58	-----	-----	90	-----	-----	122	0	0	154	1.4	1.3	186	-----	-----	218	0	0	250	0	0
27	~	~	59	3.4	3.4	91	-----	-----	123	0.3	0.1	155	2.4	2.4	187	-----	-----	219	1.3	1.3	251	3.2	3.0
28	3.4	3.4	60	3.4	3.4	92	-----	-----	124	1.2	0.1	156	-----	-----	188	-----	-----	220	~	~	252	~	~
29	0	0	61	3.5	3.5	93	0	0	125	0.3	0.1	157	0	0	189	-----	-----	221	~	~	253	0	0
30	~	~	62	3.4	3.4	94	-----	-----	126	0.1	0.1	158	0.9	0.9	190	3.4	3.5	222	0	0	254	~	~
31	~	~	63	0	0	95	-----	-----	127	2.3	2.3	159	3.4	3.4	191	0	0	223	~	~	255	3.4	3.4
32	~	~	64	0	0	96	-----	-----	128	1.7	1.7	160	0	0	192	~	~	224	~	~	256	~	~

DVD Main 3/3 Schematic Diagram < DVD Section >



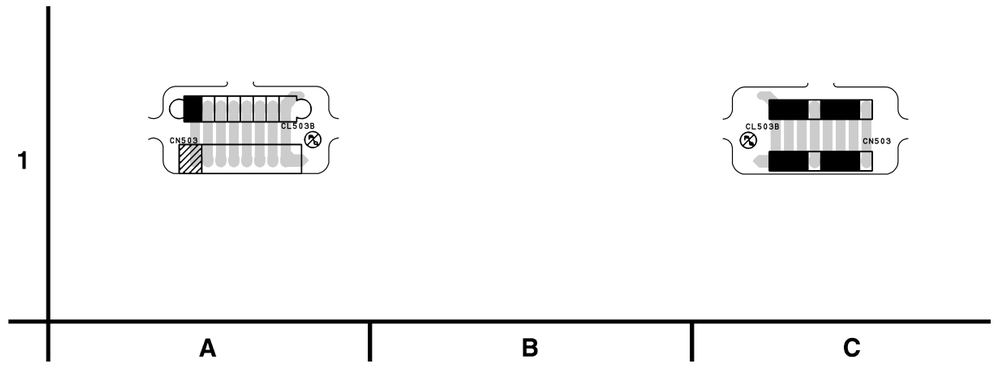
Junction-A CBA Top View

Junction-A CBA Bottom View

BT6100F01011

Junction-D CBA Top View

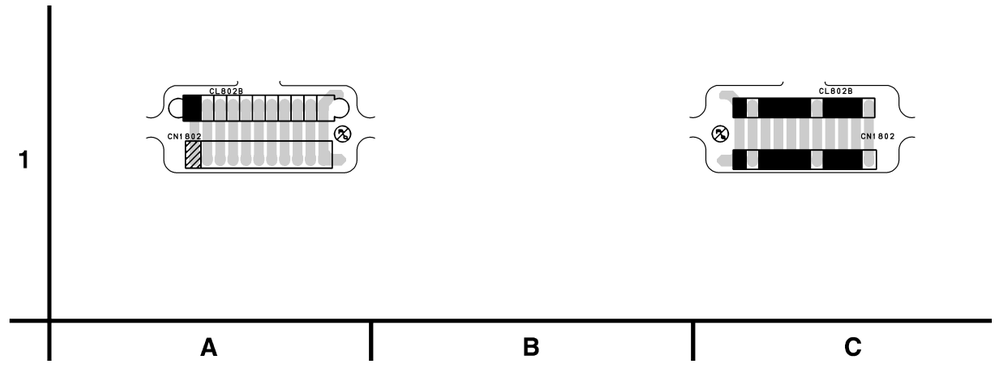
Junction-D CBA Bottom View



BT6100F01021

Junction-B CBA Top View

Junction-B CBA Bottom View



BT6100F01021

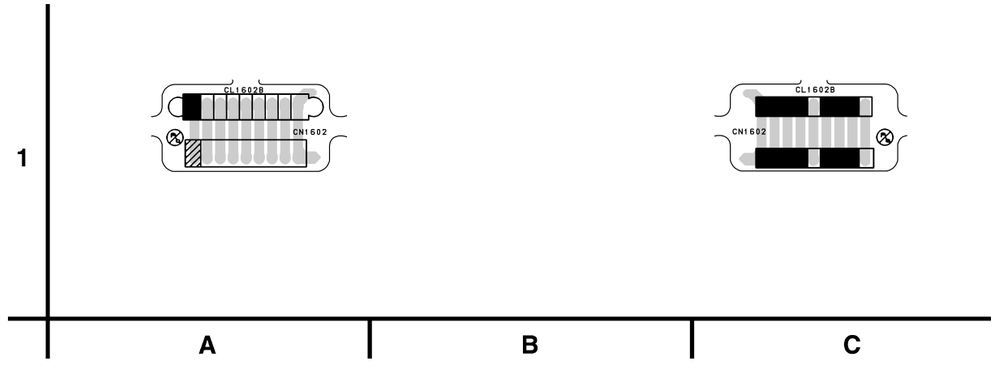
Junction-E CBA Top View

Junction-E CBA Bottom View

BT6100F01021

Junction-C CBA Top View

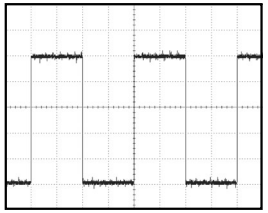
Junction-C CBA Bottom View



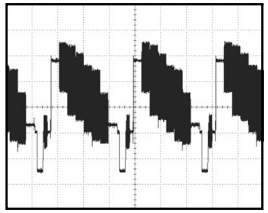
BT6100F01021

WAVEFORMS

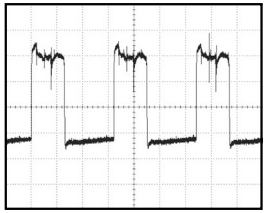
Input: NTSC Color Bar Signal (with 1kHz Audio Signal) --- WF1~WF16
DVD Video (Power on (Stop) MODE) --- WF17, WF18
CD (1KHz Play) --- WF19, WF20
INITIAL POSITION: Unplug unit from AC outlet for at least five minutes, reconnect to AC outlet and then turn power on.
(Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%)



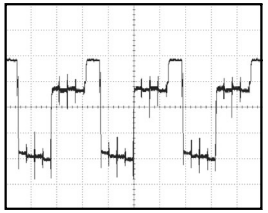
WF1 1DIV: 1V 10ms
TP002 RF-SW



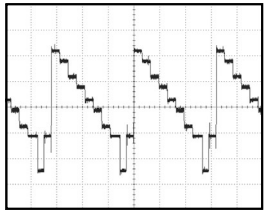
WF5 1DIV: 0.5V 20 µs
TP003 V-OUT



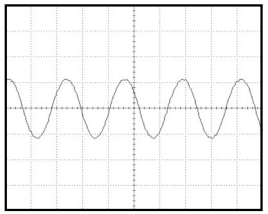
WF9 1DIV: 1V 20µs
TP503 H-DRIVE



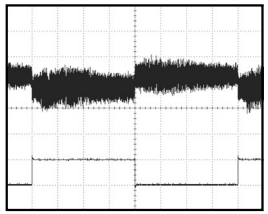
WF13 1DIV: 20V 20µs
Q502 COLLECTOR



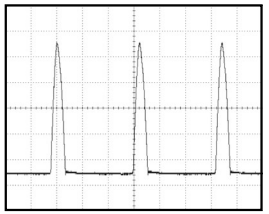
WF17 1DIV: 0.2V 20µs
J453 DVD-Y



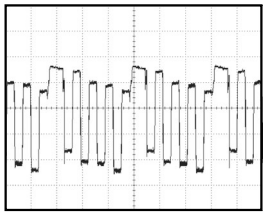
WF2 1DIV: 0.2V 0.1µs
IC401 Pin 28



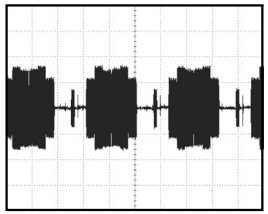
Upper: **WF6** Lower: **WF1**
1DIV: 0.2V 2DIV: 5V 5ms
TP008 ENV.



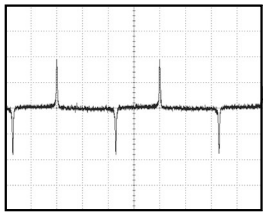
WF10 1DIV: 200V 20µs
Q571 COLLECTOR



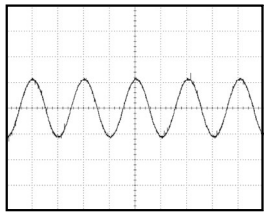
WF14 1DIV: 20V 20µs
Q501 COLLECTOR



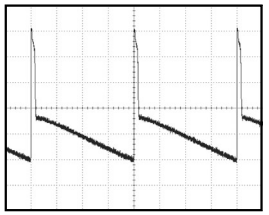
WF18 1DIV: 0.2V 20µs
J454 DVD-C



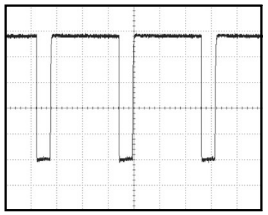
WF3 1DIV: 1V 10ms
TP001 CTL-AMP-OUT



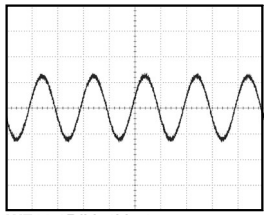
WF7 1DIV: 0.2V 0.5ms
TP007 A-OUT



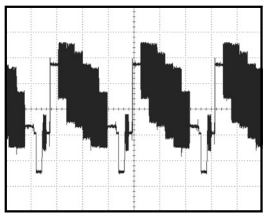
WF11 1DIV: 10V 5ms
CN571 PIN 5



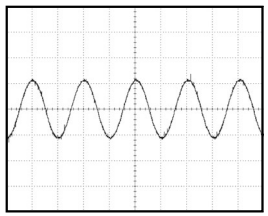
WF15 1DIV: 1V 20µs
IC201 PIN 58



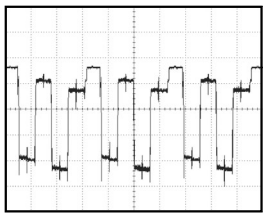
WF19 1DIV: 1V 0.5ms
J902 DVD-AUDIO-L



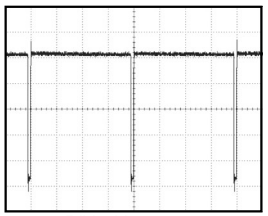
WF4 1DIV: 0.2V 20µs
IC401 Pin 50



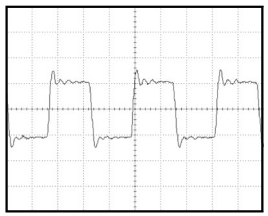
WF8 1DIV: 0.5V 0.5ms
IC401 PIN9



WF12 1DIV: 20V 20µs
Q503 COLLECTOR

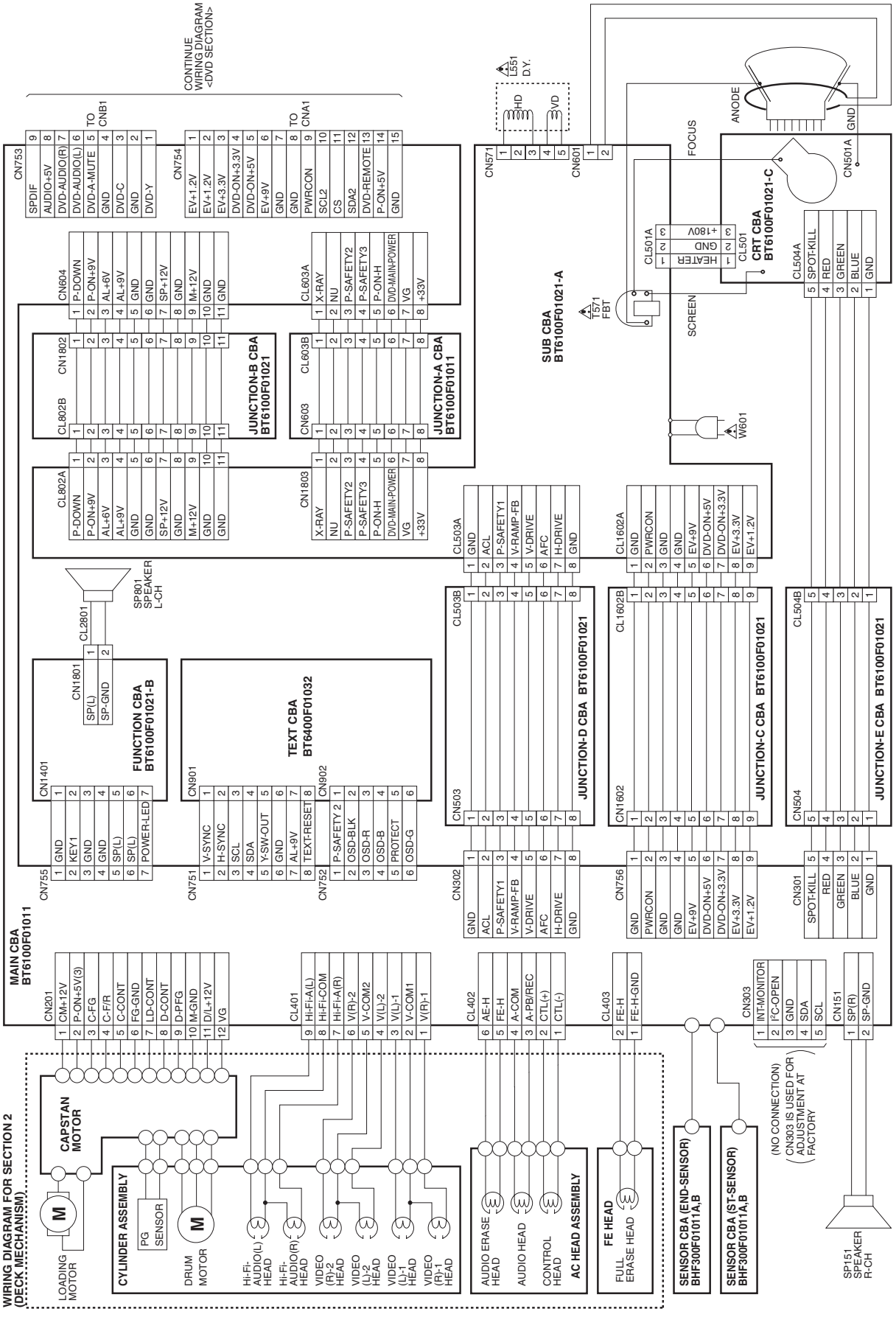


WF16 1DIV: 1V 5ms
IC201 PIN 59

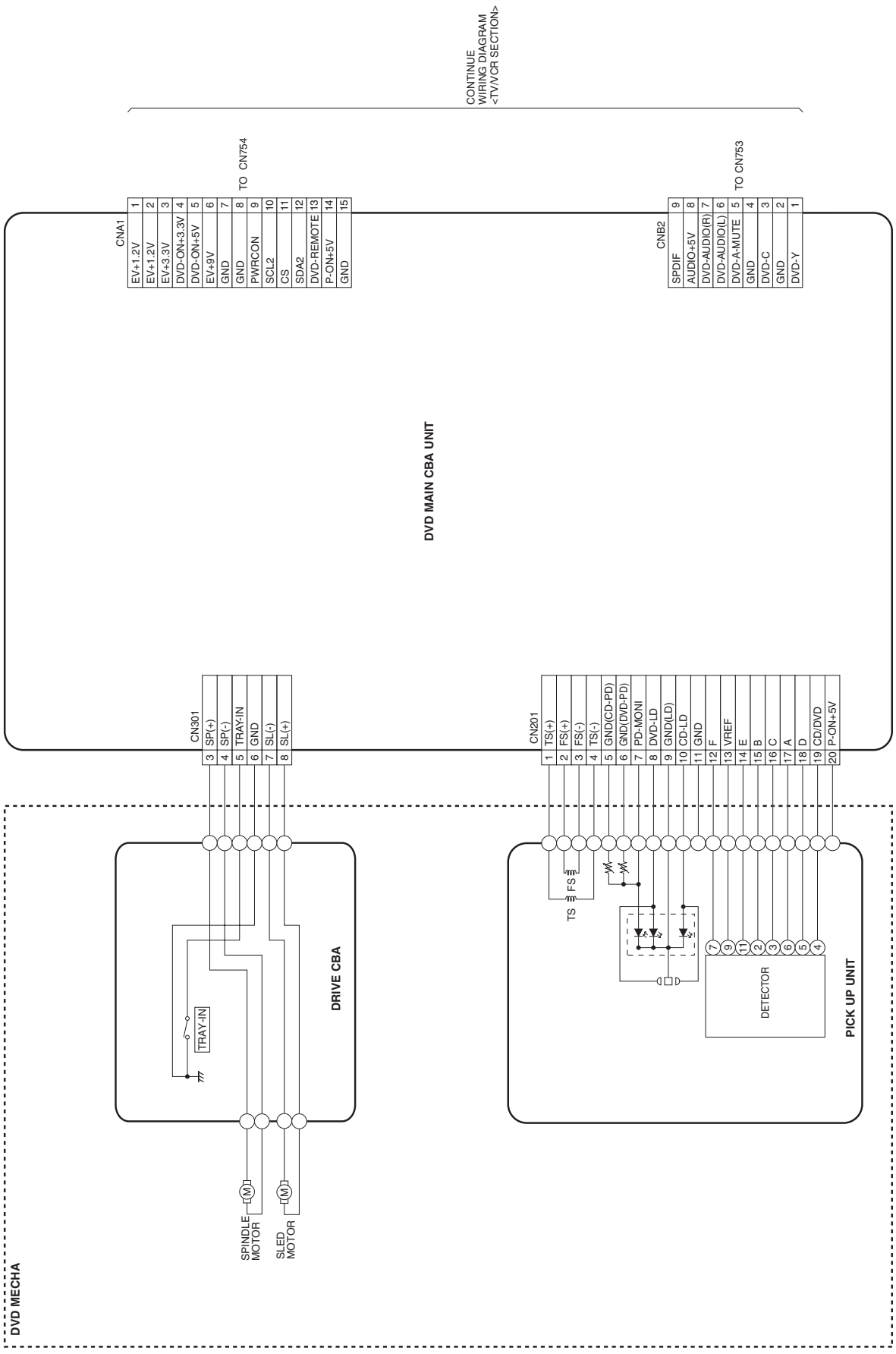


WF20 1DIV: 1V 0.2µs
J901 DVD-AUDIO-R

WIRING DIAGRAM < TV/VCR Section >



WIRING DIAGRAM < DVD Section >



SYSTEM CONTROL TIMING CHARTS

[VCR SECTION]

Mode SW : LD-SW

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

Note:

Note:

EJ ⟶ RS: Loading FWD (LM-FWD/REV “H”)
RS ⟶ EJ: Loading REV (LM-FWD/REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

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

Chart 1

1) SP MODE

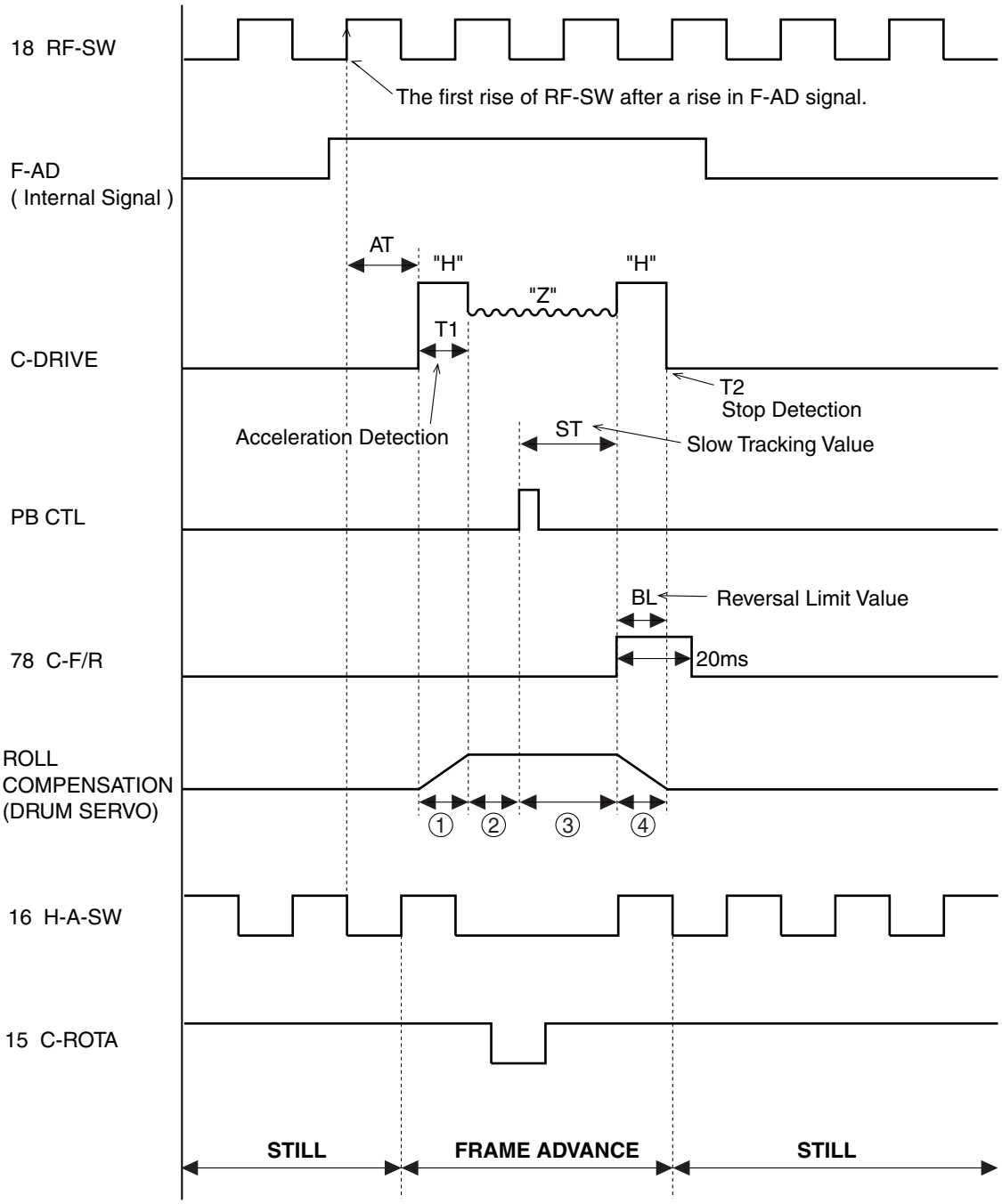


Chart 2

2) LP/EP MODE

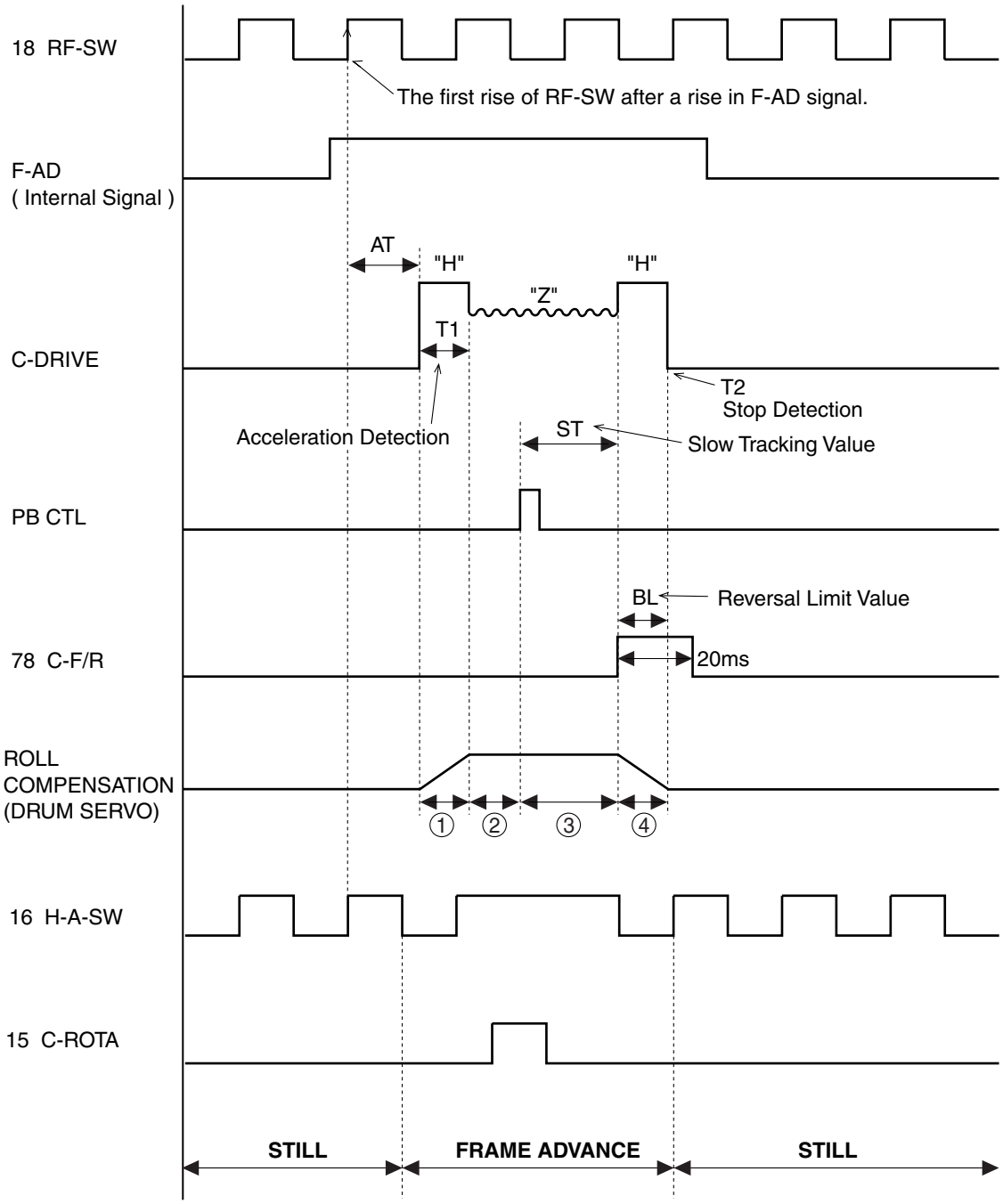


Chart 3

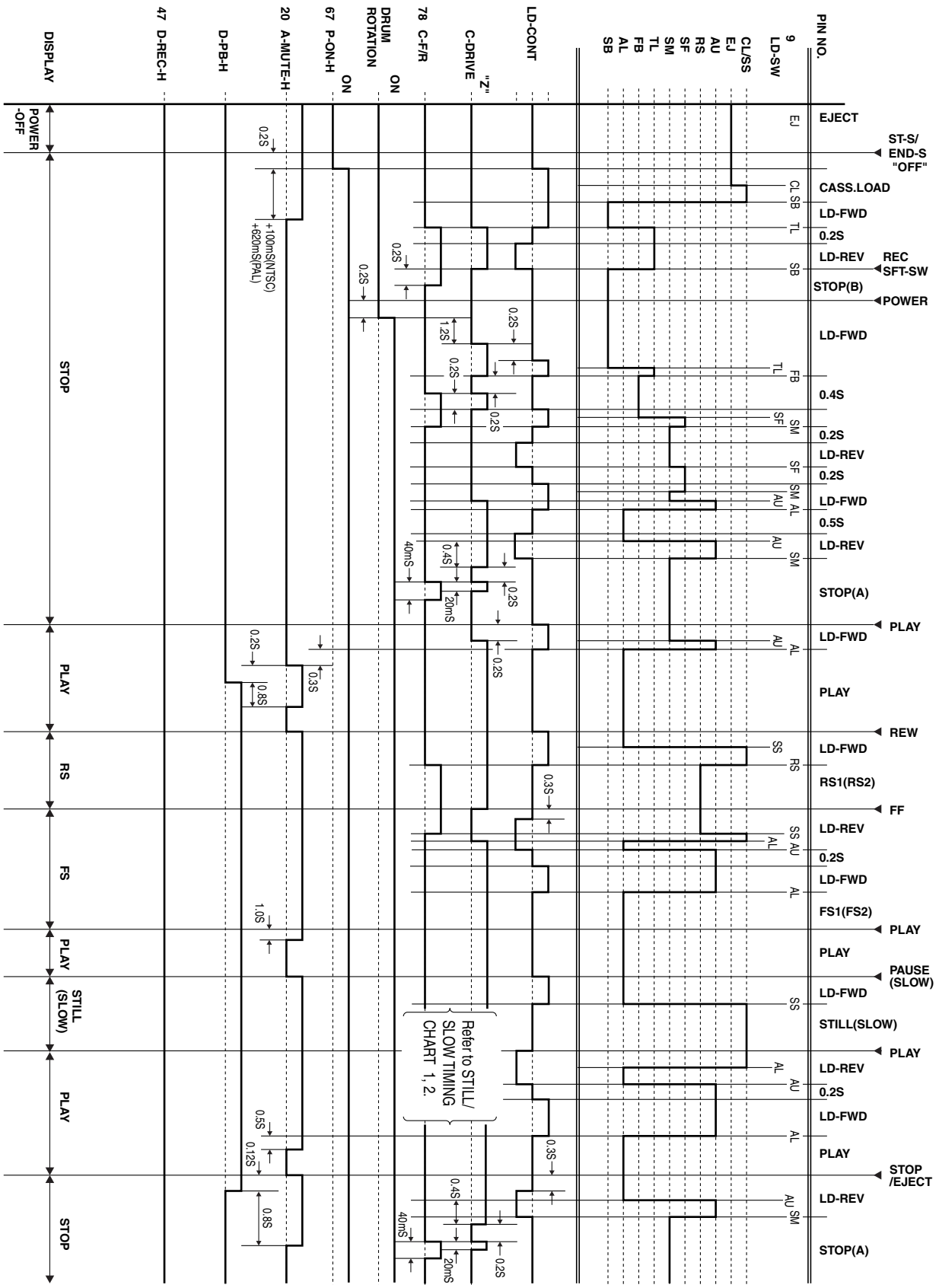
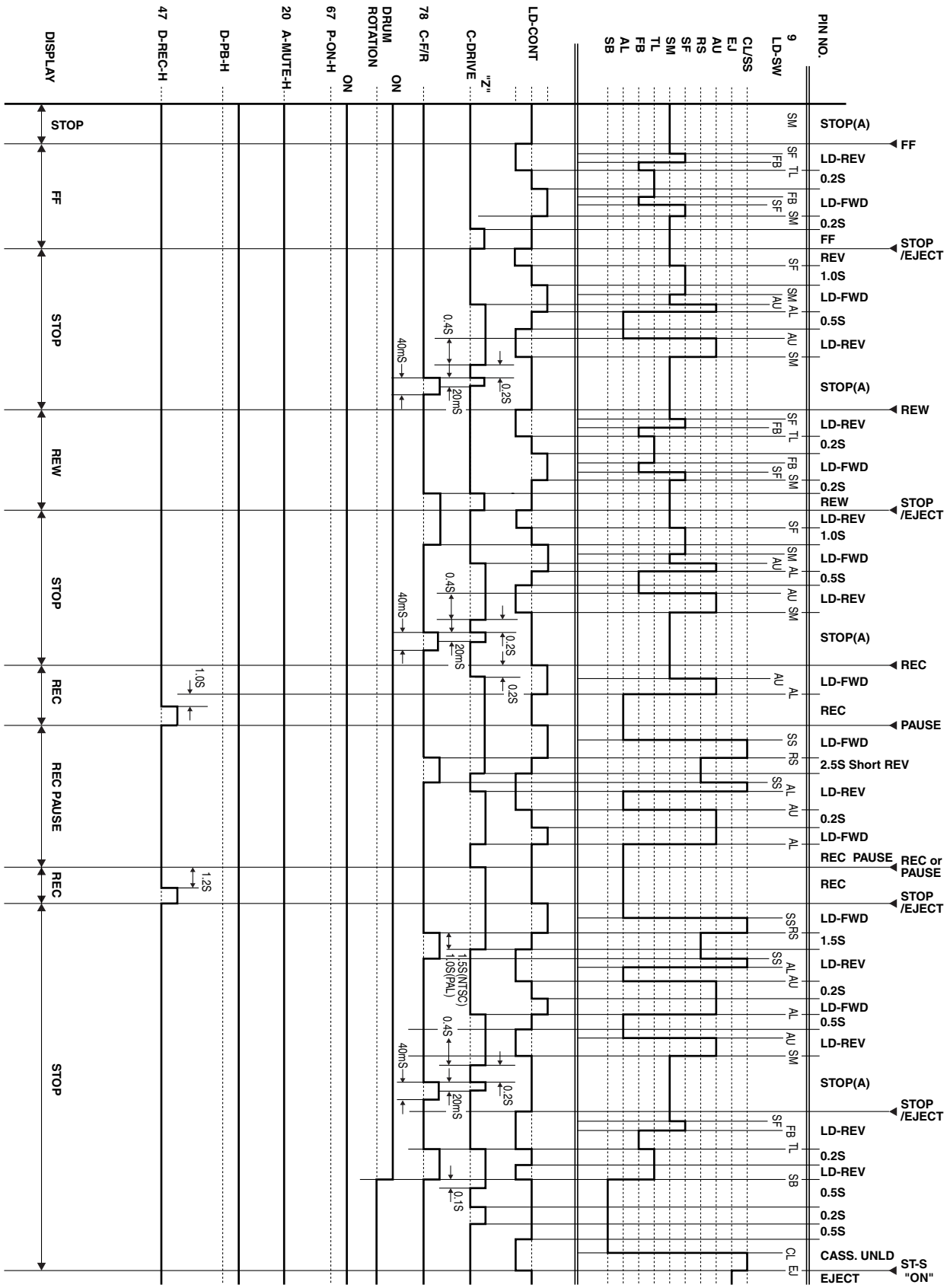
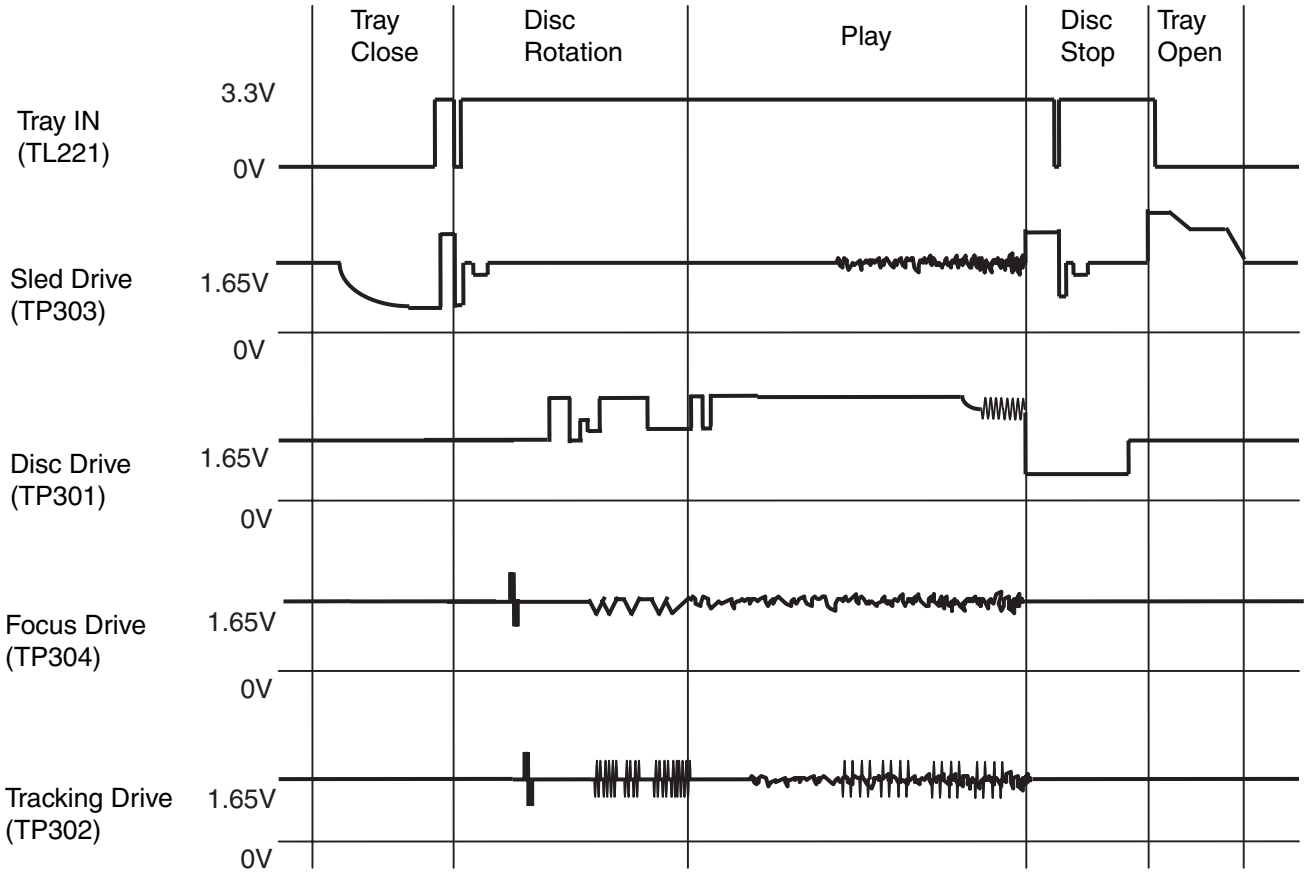

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL/SLOW -> PLAY -> STOP(A)
PIN NO.
9 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
LD-CONT
C-DRIVE
"Z"
78 C-F/R
DRUM ROTATION
ON
67 P-ON-H
20 A-MUTE-H
D-PB-H
47 D-REC-H
DISPLAY
POWER -OFF
EJECT
ST-S/ END-S "OFF"
CASS.LOAD
LD-FWD
0.2S
LD-REV
REC SFT-SW
STOP(B)
POWER
0.4S
0.5S
STOP(A)
PLAY
REW
RS1(RS2)
FF
FS1(FS2)
PAUSE (SLOW)
STILL(SLOW)
STOP /EJECT
STOP
PLAY
RS
FS
STILL (SLOW)
+100mS(NTSC) +620mS(PAL)
1.2S
40mS
20mS
0.8S
1.0S
0.12S
Refer to STILL/ SLOW TIMING CHART 1, 2.

Chart 4


2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
9 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
LD-CONT
C-DRIVE
"Z"
78 C-F/R
DRUM ROTATION
67 P-ON-H
20 A-MUTE-H
D-PB-H
47 D-REC-H
DISPLAY
STOP
FF
REW
REC
REC PAUSE
STOP(A)
FF
LD-REV
0.2S
LD-FWD
STOP /EJECT
REV
1.0S
0.5S
REW
REC
PAUSE
2.5S Short REV
REC PAUSE
REC or PAUSE
1.5S
1.0S
1.5S(NTSC)
1.0S(PAL)
0.4S
40mS
20mS
0.1S
CASS. UNLD
EJECT
ST-S "ON"

[DVD SECTION]

Tray Close ~ Play / Play ~ Tray Open



IC PIN FUNCTION DESCRIPTIONS

Comparison Chart of Models and Marks

Model	Mark
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D

IC 201 (TV/VCR Micro Controller)

"H" ≥ 4.5V, "L" ≤ 1.0V

Pin No.	Mark	IN/ OUT	Signal Name	Function
1		IN	P-SAFETY 3	Power Supply Failure Detection 3
2		IN	P-SAFETY 2	Power Supply Failure Detection 2
3		IN	P-SAFETY 1	Power Supply Failure Detection 1
4		IN	END-SENS	End-Sensor
5		IN	AFC	Automatic Frequency Control Signal
6		IN	V-ENV	Video Envelope Input
7		IN	KEY-0	Key 1 Input
8		IN	KEY-1	Key 2 Input
9		IN	LD-SW	Loading Switch Input
10		IN	ST-SENS	Start-Sensor
11		OUT	OUTPUT-SELECT	Output Select
12		OUT	VOLUME	Volume Control
13		IN/ OUT	DV-SYNC	Artificial V-Sync Output
14		IN/ OUT	REMOTE	Remote Signal Input
15		OUT	C-ROTA	Color Phase Rotary Changeover SIgnal
16		OUT	H-A-SW	Video Head Amp Switching Pulse
17		IN	H-A-COMP	Head Amp Comparator Signal
18		OUT	RF-SW	Video Head Switching Pulse
19		OUT	Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
20		OUT	A-MUTE-H	Audio Mute Control Signal (Mute = "H")
21		OUT	EX/DEC-H	Output in Decoder-on
22		OUT	DVD-REMOTE	Remote Control Signal to DVD
23		IN	X-RAY	for X-Ray Protect
24		OUT	REC-LED	Recording LED Control Signal
25		-	NU	Not Used
26		IN	A-MODE	Hi-Fi Tape Detection Signal
27		-	NU	Not Used
28		-	NU	Not Used
29		OUT	SCART-MUTE	RAPID-Switch Input Signal from Scart Jack
30		OUT	TV/VCR-LED	TV/VCR LED Control Signal
31		IN	REC-SAFETY	Record Protection Tab Detection
32	A,B, D	-	NU	Not Used
	C	IN	SECAM-H	SECAM Mode at High
33	A,B, D	-	NU	Not Used
	C	IN/ OUT	TRICK-H	Special Playback = "H" in SECAM Mode
34		IN	RESET	System Reset Signal (Reset="L")
35		IN	XCIN	Sub Clock 32 kHz
36		OUT	XCOUT	Sub Clock 32 kHz
37		-	TIMER+5V	Vcc
38		IN	XIN	Main Clock Input
39		OUT	XOUT	Main Clock Output
40		-	GND	GND
41		OUT	SPOT-KILL	Counter-measure for Spot
42		-	NU	Not Used
43		IN	CLKSEL	Clock Select (GND)
44		OUT	SP-MUTE	Speaker Mute Signal
45		IN/ OUT	I2C-OPEN	White Balance Adjust Mode Judgment
46		-	GND	GND
47		OUT	D-REC-H	Delayed Record Signal
48		-	NU	Not Used

Pin No.	Mark	IN/ OUT	Signal Name	Function
49		-	OSD-GND	OSD GND
50		IN	CS	Chip Select
51		IN	SCL2	Serial Clock
52		IN	SDA2	Serial Data
53		-	OSDVcc	OSDVcc
54		-	HLF	HLF
55		OUT	VIDEO-MUTE	Video Mute
56		IN	CV-IN	Video Signal Input
57		-	GND	GND
58		IN	H-SYNC	H-SYNC Input
59		IN	V-SYNC	V-SYNC Input
60		OUT	OSD-BLK	Output for Picture Cut off
61		OUT	RGB-CONT	RGB Control Signal
62		OUT	OSD-B	Blue Output
63		OUT	OSD-G	Green Output
64		OUT	OSD-R	Red Output
65		IN	RAPID-SW-IN	RAPID-Switch Input Signal
66		OUT	TEXT-RESET	Tele Text Reset
67		OUT	P-ON-H	Power On Signal at High
68		IN	SLOW-SW-IN	Slow Switch Input Signal
69		OUT	DVD-MAIN-POWER	Power On Signal to High for DVD
70		OUT	TEXT-IN-H	Tele Text Input Signal at High
71		IN/ OUT	SCL	E2PROM/ CHROMA IC Tuner Communication Clock
72		IN/ OUT	SDA	E2PROM/ CHROMA IC Tuner Communication Data
73		OUT	DVD-LED	DVD LED Control Signal
74		IN	C-SYNC	C-Sync Input
75		OUT	NICAM-RESET	NICAM IC Reset Output
76		OUT	C-CONT	Capstan Motor Control Signal
77		OUT	D-CONT	Drum Motor Control Signal
78		OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/ REV="H")
79		-	NU	Not Used
80		IN/ OUT	T-REEL	Take Up Reel Rotation Signal
81		IN/ OUT	LD-CONT	Loading Motor Control Signal
82		OUT	TEXT-L	Teletext Control Signal
83		IN	DVD-A-MUTE	DVD Audio Mute Signal
84		OUT	DECODER-MUTE	Decoder Mute
85		IN	P-DOWN	Power Voltage Down Detector Signal at Low
86		-	NU	Not Used
87		IN	C-FG	Capstan Motor Rotation Detection Pulse
88		-	AMPVss	AMPVss (GND)
89		-	NU	Not Used
90		IN	D-PFG	Drum Motor Phase/ Frequency Generator
91		OUT	AMP VREF-OUT	Standard Voltage Output
92		IN	AMP VREF-IN	Standard Voltage Input
93		-	C	C Terminal
94		IN/ OUT	CTL (-)	CTL (-)
95		IN/ OUT	CTL (+)	CTL (+)
96		-	AMPC	AMPC
97		OUT	CTL AMP-OUT	Control Amp Output
98		-	AMPVcc	AMPVcc
99		-	AVcc	A/D Converter Power Input/ Standard Voltage Input
100		IN	AGC	Tuner IF Output Signal

LEAD IDENTIFICATIONS

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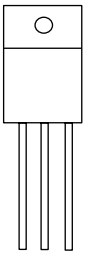

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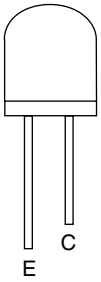

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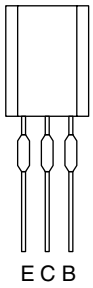

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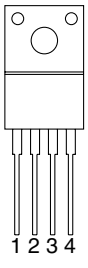
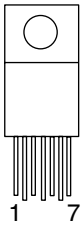


1: Vin
2: Vo
3: GND
4: Vc

AN15524A
LA78040A



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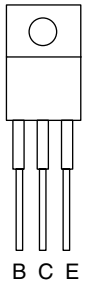

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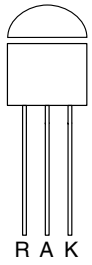
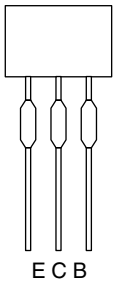
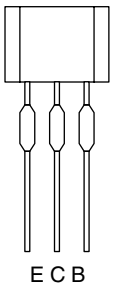




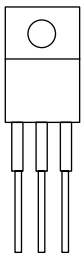
2SA1015-GR(TPE2)
2SC1815-GR(TPE2)
2SC2120-O-TPE2
2SC2120-Y
2SC2120-Y(TPE2)
KTA1267(GR)
KTC3199(GR)
KTC3207



2SA1175(F)
2SA1346
2SA950(O,Y)
2SC1627Y-TPE2
2SC2482 TPE6
2SC2785(F,H,J)
2SC3331(T,U)
2SC3400

BA1F4M-T
BN1F4M-T
KRA103M
KRC103M
KTA1266(GR)
KTA1271(Y)
KTC3198(GR)
KTC3203(Y)

KA7805A
KIA7805API



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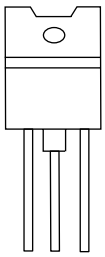

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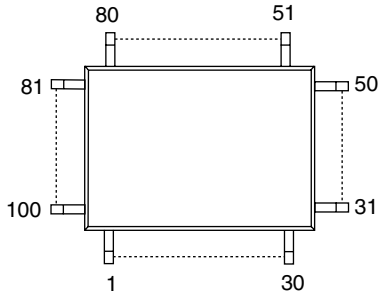

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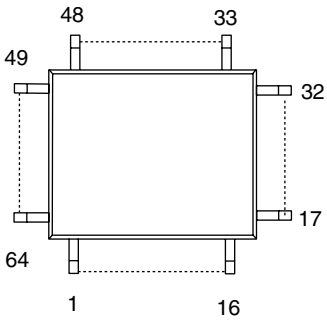

CD4053BCSJX
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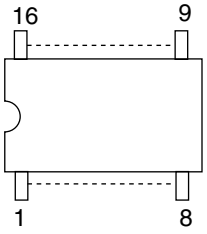

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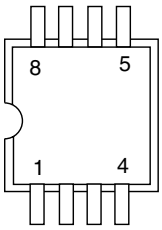
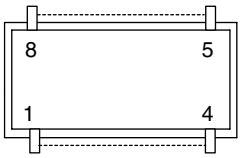
BR24L04F-WE2
CAT24WC04JI
M24C04-WMN6



PS2561L1-1-VL
PS2561L1-1-VW

AN17812A



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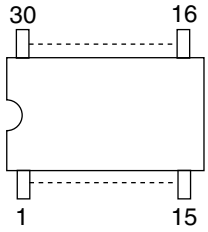

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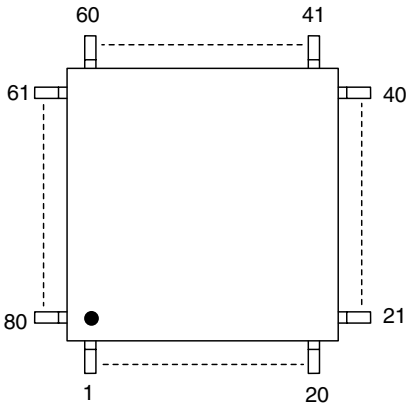

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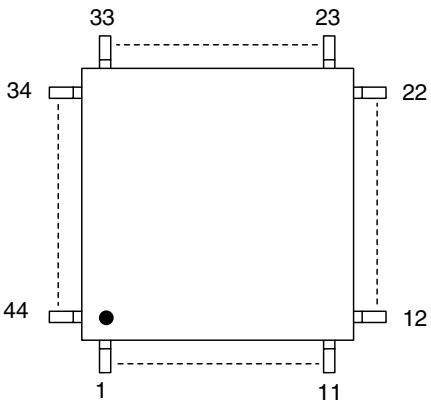

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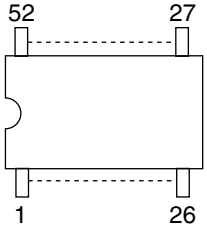
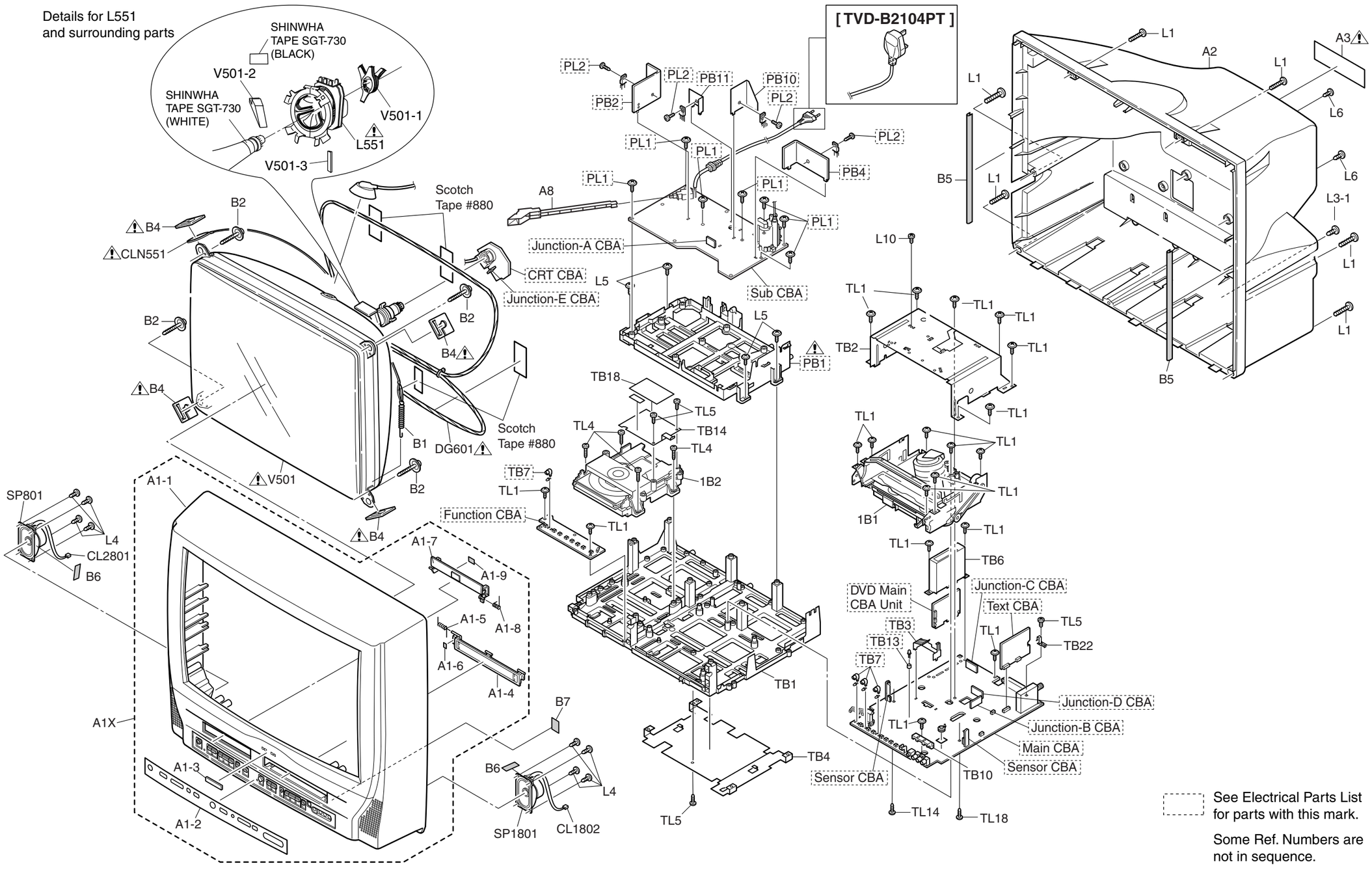


Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS

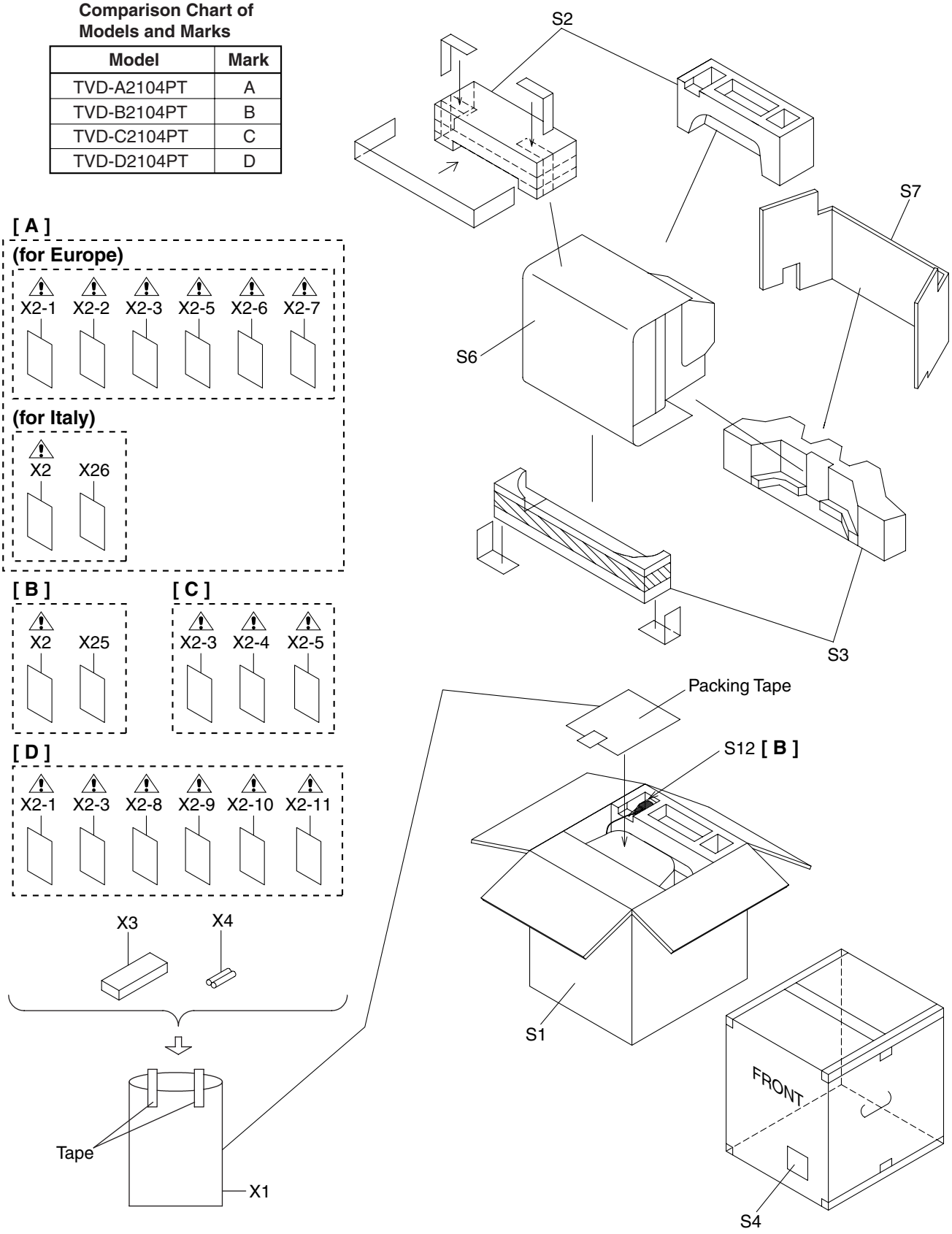
Cabinet



Packing

Comparison Chart of Models and Marks

Model	Mark
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D



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.

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

Comparison Chart of Models and Marks

Model	Mark
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D

Ref. No.	Mark	Description	Part No.
A1X	A,D	FRONT CABINET ASSEMBLY T6100EA	1EM120076
A1X	B	FRONT CABINET ASSEMBLY T6101BB	1EM120077
A1X	C	FRONT CABINET ASSEMBLY T6102FC	1EM120082
A1-1		FRONT CABINET T6100EA	1EM020104
A1-2	A,D	CONTROL PLATE T6100EA	1EM220047
A1-2	B	CONTROL PLATE T6101BB	1EM220053
A1-2	C	CONTROL PLATE T6102FC	1EM220058
A1-3		BRAND BADGE T6600EAFUNAI	0EM408807
A1-4	A,B,D	CASSETTE DOOR T6100EA	1EM420379
A1-4	C	CASSETTE DOOR T6102FC	1EM420458
A1-5		SPRING DOOR(Z10) T5200UA	0EM406687
A1-6		CLOTH(4X7XT0.7) T5000UA	0EM404974
A1-7		TRAY PANEL T6100EA	1EM420380
A1-8		TRAY SPRING TD707UH	0EM408552
A1-9		CLOTH(B) L5201U0:15X10X1.0T	0EM400076
A2		REAR CABINET T6100EA	1EM020030
A3⚠	A	RATING LABEL T6100EA	---------
A3⚠	B	RATING LABEL T6101BB	---------
A3⚠	C	RATING LABEL T6102FC	---------
A3⚠	D	RATING LABEL T6103RD	---------
A8		POWER BUTTON T6100EA	1EM220029
1B1		DECK ASSEMBLY CZD013/VM2366	N2366FT
1B2		DVD MECHA(TRP-COMBO/PAL) N79U1HVM	N79U1HVM
B1		SPRING TENSION B0080B0:EM40808	26WH006
B2		SCREW L1500UA	0EM406142
B4⚠		DEGAUSS HOLDER L2401UB	1EM420205
B5		CLOTH 190X15XT0.5	TS7623
B6		CLOTH(10X30XT0.5) B5900UA	0EM404486
B7		CLOTH(15X10XT0.5) L9700UA	0EM405038
CL1802		WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L9800-001
CL2801		WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L9800-001
CLN551⚠		CRT WIRE WX1T7180-005	WX1T7180-005
DG601⚠		DEGAUSSING COIL F-062	LLBH00ZTM062
L1		SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L3-1		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
L4		SCREW, P-TIGHT 3X10 BIND HEAD+	GBMP3100
L5		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
L6		SCREW, P-TIGHT M4X12 BIND HEAD+	GBUP4120
L10		SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
L551⚠		DEFLECTION YOKE KDY3NDH26X or	LLBY00ZMS034
⚠		DEFLECTION YOKE CDY-M2102F or	LLBY00ZQS020
⚠		DEFLECTION YOKE LLBY00ZSY010	LLBY00ZSY010
SP801		SPEAKER S0407F01A	DSD0807XQ001
SP1801		SPEAKER S0407F01A	DSD0807XQ001
TB1		TRAY CHASSIS T6100EA	1EM020029
TB2		TOP COVER T6100EA	1EM120030
TB4		BOTTOM PLATE T6100EA	1EM120031
TB6		X5 SHIELD BOX T8020UA	0EM302034
TB10		RCA HOLDER T6100EA	1EM420410
TB14		X5PAL LODER COVER T6100EA	1EM420187
TB18		LABEL, LASER CAUTION (C) TD100UA	---------
TB22		TE HOLDER T6720EA	0EM408837
TL4		SCREW, P-TIGHT 3X16 BIND HEAD +	GBMP3160
TL5		P-TIGHT SCREW 3X8 BIND +	GBMP3080
TL14		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TL18		SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
V501⚠		CRT A51MAJ197X	TCRT190PTD03
V501-1		C.P.MAGNET JH225-FN-00 or	XM04000BV003
		CPM E-225-F02	XM04000ETC02
V501-2		WEDGE FT-00110W or	XV10000T4001
		WEDGE DB25SR	XV10000D9001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
PACKING			
S1	A	CARTON T6100EA	1EM420449
S1	B	CARTON T6101BB	1EM420457
S1	C	CARTON T6102FC	1EM420461
S1	D	CARTON T6103RD	1EM420464
S2		STYROFOAM TOP ASSEMBLY T6100EA	1EM420450
S3		STYROFOAM BOTTOM ASSEMBLY T6100EA	1EM420451
S4	A	SERIAL NO. LABEL T6100EA (for Europe)	---------
S4	A	SERIAL NO. LABEL T6104LE (for Italy)	---------
S4	B	SERIAL NO. LABEL T6101BB	---------
S4	C	SERIAL NO. LABEL T6101BB	---------
S4	D	SERIAL NO. LABEL T6103RD	---------
S6		SET SHEET B7500UA:1000X1700	0EM402178
S7		HOLD PAD T6100EA	1EM420402
S12	B	AC CORD SHEET T4400UA	0EM407920
ACCESSORIES			
X1		BAG POLYETHYLENE 235X365XT0.03	0EM408420
X2⚠	A	OWNER'S MANUAL TVD-A2104PTIT (for Italy)	1EMN20132
X2⚠	B	OWNER'S MANUAL TVD-B2104PTEN	1EMN20136
X2-1⚠	A	OWNER'S MANUAL TVD-A2104PTEN (for Europe)	1EMN20129
X2-1⚠	D	OWNER'S MANUAL TVD-D2104PTEN	1EMN20140
X2-2⚠	A	OWNER'S MANUAL TVD-A2104PTSP (for Europe)	1EMN20133
X2-3⚠	A	OWNER'S MANUAL TVD-A2104PTGE (for Europe)	1EMN20131
X2-3⚠	C	OWNER'S MANUAL TVD-C2104PTGE	1EMN20138
X2-3⚠	D	OWNER'S MANUAL TVD-D2104PTGE	1EMN20142
X2-4⚠	C	OWNER'S MANUAL TVD-C2104PTIT	1EMN20139
X2-5⚠	A	OWNER'S MANUAL TVD-A2104PTFR (for Europe)	1EMN20130

Ref. No.	Mark	Description	Part No.
X2-5⚠	C	OWNER'S MANUAL TVD-C2104PTFR	1EMN20137
X2-6⚠	A	OWNER'S MANUAL TVD-A2104PTDU (for Europe)	1EMN20134
X2-7⚠	A	OWNER'S MANUAL TVD-A2104PTSW (for Europe)	1EMN20135
X2-8⚠	D	OWNER'S MANUAL TVD-D2104PTRU	1EMN20141
X2-9⚠	D	OWNER'S MANUAL TVD-D2104PTPL	1EMN20143
X2-10⚠	D	OWNER'S MANUAL TVD-D2104PTHU	1EMN20145
X2-11⚠	D	OWNER'S MANUAL TVD-D2104PTCZ	1EMN20144
X3		REMOTE CONTROL 151/ECPX501/ NE232RD	NE232RD
X4		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
X25	B	QUICK SETUP GUIDE T6101BB	1EMN20174
X26	A	S.C.A. LIST T6606LG (for Italy)	0EMN02482

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 are 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%

Comparison Chart of Models and Marks

Model	Mark
TVD-A2104PT	A
TVD-B2104PT	B
TVD-C2104PT	C
TVD-D2104PT	D

DVD MAIN CBA UNIT

Ref. No.	Mark	Description	Part No.
	A,C,D B	DVD MAIN CBA UNIT DVD MAIN CBA UNIT	N79U3HEP N79U4HBP

MMA CBA

Ref. No.	Mark	Description	Part No.
	A,B,D C	MMA CBA MMA CBA Consists of the following	1ESA10328 1ESA10224
		MAIN CBA JUNCTION-A CBA SENSOR CBA	---------- ---------- 1ESA10277

MAIN CBA

Ref. No.	Mark	Description	Part No.
		MAIN CBA Consists of the following	----------
		CAPACITORS	
C1		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C4		CHIP CERAMIC CAP.(1608) CH J 68pF/50V	CHD1JJ3CH680
C5		CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C6		CHIP CERAMIC CAP.(1608) CH J 68pF/50V	CHD1JJ3CH680
C7		CHIP CERAMIC CAP. CH D 3pF/50V or	CHD1JD3CH3R0
		CHIP CERAMIC CAP. CH C 3pF/50V	CHD1JC3CH3R0
C8		CHIP CERAMIC CAP. CH D 3pF/50V or	CHD1JD3CH3R0
		CHIP CERAMIC CAP. CH C 3pF/50V	CHD1JC3CH3R0
C11		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C12		ELECTROLYTIC CAP. 10μF/16V M or	CE1CMASDL100
		ELECTROLYTIC CAP. 10μF/16V M	CE1CMASTL100
C13		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C14		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C15		ELECTROLYTIC CAP. 10μF/16V M or	CE1CMASDL100
		ELECTROLYTIC CAP. 10μF/16V M	CE1CMASTL100
C16		ELECTROLYTIC CAP. 10μF/16V M or	CE1CMASDL100
		ELECTROLYTIC CAP. 10μF/16V M	CE1CMASTL100
C17		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C19		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C20		ELECTROLYTIC CAP. 3.3μF/50V M or	CE1JMASDL3R3
		ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASTL3R3
C21		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C22		ELECTROLYTIC CAP. 10μF/16V M or	CE1CMASDL100
		ELECTROLYTIC CAP. 10μF/16V M	CE1CMASTL100
C23		CHIP CERAMIC CAP. F Z 0.47μF/10V	CHD1AZ30F474
C001		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C002		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C005		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C006		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C007		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C008		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C027		CHIP CERAMIC CAP. B K 820pF/50V	CHD1JK30B821
C028		CHIP CERAMIC CAP. B K 820pF/50V	CHD1JK30B821
C151		CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C152		CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C153		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C203		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C205		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C206		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C207		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C208		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C209		CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C210		CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C211		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C212		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C213		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C214		ELECTROLYTIC CAP. 330μF/6.3V M or	CE0KMASDL331
		ELECTROLYTIC CAP. 330μF/6.3V M	CE0KMASTL331
C215		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C216		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C217		CHIP CERAMIC CAP.(1608) CH D 10pF/50V	CHD1JD3CH100
C218		CHIP CERAMIC CAP.(1608) CH D 10pF/50V	CHD1JD3CH100
C221		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C222		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C223		CHIP CERAMIC CAP. F Z 4700pF/50V	CHD1JZ30F472
C224		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C225		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C226		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C229		CHIP CERAMIC CAP. F Z 4700pF/50V	CHD1JZ30F472
C230		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C231		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C233⚠		CHIP CERAMIC CAP. F Z 1000pF/50V	CHD1JZ30F102
C234		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C235		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470

Ref. No.	Mark	Description	Part No.
C236		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C237		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C238		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C239		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C240		CHIP CERAMIC CAP. F Z 4700pF/50V	CHD1JZ30F472
C241		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C242		CERAMIC CAP.(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C243		ELECTROLYTIC CAP. 47μF/6.3V M or	CE0KMASDL470
		ELECTROLYTIC CAP. 47μF/6.3V M	CE0KMASTL470
C244		CERAMIC CAP.(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C245		ELECTROLYTIC CAP. 47μF/6.3V M or	CE0KMASDL470
		ELECTROLYTIC CAP. 47μF/6.3V M	CE0KMASTL470
C248		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C253		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C254		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C255		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C259		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C260		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C281		CHIP CERAMIC CAP. CH J 220pF/50V	CHD1JJ3CH221
C301		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C302		ELECTROLYTIC CAP. 1000μF/6.3V M or	CE0KMASDL102
		ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASTL102
C303		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C304		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C305		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C307		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C308		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C309		STACKED FILM CAP. 0.47μF/50V J or	CMA1JJS00474
		TF CAP. 0.47μF/50V J or	CT1J474MS045
		TF CAP. 0.47μF/50V J	CT1J474MS010
C310		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C311		ELECTROLYTIC CAP. 1000μF/6.3V M or	CE0KMASDL102
		ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASTL102
C312		CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJ3CH181
C313		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C314		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C315		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C316		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C317		CHIP CERAMIC CAP. CH J 150pF/50V	CHD1JJ3CH151
C318		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C319		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C320		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C321		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C323		ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C324		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C325		MYLAR CAP. 0.22μF/50V J or	CMA1JJS00224
		FILM CAP.(P) 0.22μF/50V J or	CA1J224MS029
		TF CAP. 0.22μF/50V J	CT1J224MS045
C327		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C328		MYLAR CAP. 0.22μF/50V J or	CMA1JJS00224
		FILM CAP.(P) 0.22μF/50V J or	CA1J224MS029

Ref. No.	Mark	Description	Part No.
		TF CAP. 0.22μF/50V J	CT1J224MS045
C334		ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C336		ELECTROLYTIC CAP. 47μF/10V M or	CE1AMASDL470
		ELECTROLYTIC CAP. 47μF/10V M	CE1AMASTL470
C337		CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C340		CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJ3CH181
C341		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C342		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C350		ELECTROLYTIC CAP. 220μF/10V M or	CE1AMASDL221
		ELECTROLYTIC CAP. 220μF/10V M	CE1AMASTL221
C401		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C402		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C403		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C404		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C405		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C406		CHIP CERAMIC CAP.(1608) B K 0.047μF/50V	CHD1JK30B473
C407		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C408		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C409		CHIP CERAMIC CAP.(1608) B K 0.047μF/50V	CHD1JK30B473
C410		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C411		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C412		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C413		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C414		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C415		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C416		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C417		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C418		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C419		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C420		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C421		ELECTROLYTIC CAP. 10μF/25V M H7	CE1EMAVSL100
C426		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C427		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C430		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C431		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C432		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C433		ELECTROLYTIC CAP. 10μF/25V M H7	CE1EMAVSL100
C434		ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMAVSL220
C435		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C436		CHIP CERAMIC CAP. CH J 120pF/50V	CHD1JJ3CH121
C437		CHIP CERAMIC CAP. F Z 0.01μF/50V	CHD1JZ30F103
C438		CHIP CERAMIC CAP. CH J 220pF/50V	CHD1JJ3CH221
C439		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C440		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C441		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C442		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C443		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C444		CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C445		ELECTROLYTIC CAP. 10μF/25V M H7	CE1EMAVSL100
C448		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C449		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C471	C	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C472	C	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C473	C	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C474	C	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C475	C	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C476	C	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C478	C	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C479	C	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103

Ref. No.	Mark	Description	Part No.
C480	C	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C481	C	ELECTROLYTIC CAP. 0.47μF/50V M H7	CE1JMAVSLR47
C483	C	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C484	C	CHIP CERAMIC CAP. CH J 820pF/50V	CHD1JJ3CH821
C485	C	CHIP CERAMIC CAP. CH J 820pF/50V	CHD1JJ3CH821
C486	C	ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C489		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C681		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C682		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C683		ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C684⚠		CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJ3CH181
C687		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C688		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C689		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C690		CHIP CERAMIC CAP. CH J 220pF/50V	CHD1JJ3CH221
C691		ELECTROLYTIC CAP. 2.2μF/50V M or	CE1JMASDL2R2
		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASTL2R2
C692		CERAMIC CAP.(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C694		ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C695		ELECTROLYTIC CAP. 47μF/16V M or	CE1CMASDL470
		ELECTROLYTIC CAP. 47μF/16V M	CE1CMASTL470
C696		CHIP CERAMIC CAP. CH J 220pF/50V	CHD1JJ3CH221
C698⚠		ELECTROLYTIC CAP. 22μF/16V M or	CE1CMASDL220
⚠		ELECTROLYTIC CAP. 22μF/16V M	CE1CMASTL220
C699		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C701		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C705		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C708		ELECTROLYTIC CAP. 0.47μF/50V M or	CE1JMASDLR47
		ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASTLR47
C709		ELECTROLYTIC CAP. 0.47μF/50V M or	CE1JMASDLR47
		ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASTLR47
C710		ELECTROLYTIC CAP. 0.47μF/50V M or	CE1JMASDLR47
		ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASTLR47
C711		ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C713		ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASTL101
C714		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C715		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C716		CHIP CERAMIC CAP.(1608) B K 0.047μF/50V	CHD1JK30B473
C723		CHIP CERAMIC CAP. F Z 1000pF/50V	CHD1JZ30F102
C725		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C726		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C727		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C728		CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C729		CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C803		ELECTROLYTIC CAP. 47μF/25V M H7	CE1EMAVSL470
C804		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C805		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104

Ref. No.	Mark	Description	Part No.
C806		CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C807		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMAVSL220
C808		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C809		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C810		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C811		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMAVSL220
C812		CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C813		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C814		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C816		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C817		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C819		ELECTROLYTIC CAP. 330μF/6.3V M H7	CE0KMAVSL331
C820		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMAVSL220
C821		CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C822		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C823		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C824		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C825		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C826		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C829		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C831		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C833		CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C834		ELECTROLYTIC CAP. 47μF/25V M H7	CE1EMAVSL470
C851		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C855		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C856		CERAMIC CAP. B K 470pF/100V or	CCD2AKS0B471
		CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C857		FILM CAP.(P) 0.018μF/100V J or	CMA2AJS00183
		FILM CAP.(P) 0.018μF/50V J	CA1J183MS029
C858		CHIP CERAMIC CAP. B K 1500pF/50V	CHD1JK30B152
C859		CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C860		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C861		CERAMIC CAP.(AX) X M 1800pF/16V	CCA1CMT0X182
C862		ELECTROLYTIC CAP. 10μF/25V M H7	CE1EMAVSL100
C863		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C864		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C865		CHIP CERAMIC CAP.(1608) B K 0.022μF/50V	CHD1JK30B223
C866		ELECTROLYTIC CAP. 33μF/10V H7	CE1AMAVSL330
C867		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C868		CHIP CERAMIC CAP. F Z 4700pF/50V	CHD1JZ30F472
C870		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C872		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C873		CHIP CERAMIC CAP. CH J 150pF/50V	CHD1JJ3CH151
C876		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C877		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C881		CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C882		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C883		ELECTROLYTIC CAP. 22μF/6.3V M H7	CE0KMAVSL220
C884		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C885		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C886		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C887		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C888		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C889		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C890		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C895		ELECTROLYTIC CAP. 22μF/16V M or	CE1CMASDL220
		ELECTROLYTIC CAP. 22μF/16V M	CE1CMASTL220
C896		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0

Ref. No.	Mark	Description	Part No.
C897		CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C900		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C901		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C902		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C903		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C905		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C908		CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C910		CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C914		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C915		CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C916		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C917		CHIP CERAMIC CAP. F Z 1μF/10V	CHD1AZ30F105
C918		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C919		ELECTROLYTIC CAP. 220μF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220μF/16V M	CE1CMASTL221
C920		ELECTROLYTIC CAP. 220μF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220μF/16V M	CE1CMASTL221
C927		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C928		ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C931		ELECTROLYTIC CAP. 1000μF/6.3V M or	CE0KMASDL102
		ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASTL102
C934		ELECTROLYTIC CAP. 470μF/6.3V M or	CE0KMASDL471
		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASTL471
C936		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C938		ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
		ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C940		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJ3CH561
C945		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C946		CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
CONNECTORS			
CN151		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
		STRAIGHT PIN HEADER, 2P 173981-2	1770258
CN201		FMN CONNECTOR, TOP 12P 12FMN-BTRK	JCFNG12JG002
CN301		CONNECTOR BASE, 5P TUC-P05P-B1	J3TUA05TG001
CN302		CONNECTOR BASE, 8P TUC-P08P-B1	J3TUA08TG001
CN303		CONNECTOR BASE, 5P TUC-P05P-B1	J3TUA05TG001
CN604		CONNECTOR BASE 11P TUC-P11P-B1	J3TUA11TG001
CN751		CONNECTOR BASE, 8P TUC-P08P-B1	J3TUA08TG001
CN752		CONNECTOR BASE, 6P TUC-P06P-B1	J3TUA06TG001
CN755		TWG CONNECTOR 07P TWG-P07P-A1	J3TWA07TG001
CN756		CONNECTOR BASE, 9P TUC-P09P-B1	J3TUA09TG001
DIODES			
D001		ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D002		ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D202		LED LTL-4214M1 or	NPQZLTL4214M
		LED LAMP 333HT/F45-50K or	NPWK333HTF45
		LED LAMP 333HT/F45-50L or	NPWL333HTF45
		LED LAMP 333HT/F45-50M	NPWM333HTF45
D204		LED SIR-563ST3F P or	QPQPS1R563ST

Ref. No.	Mark	Description	Part No.
		LED SIR-563ST3F Q or	QPQQS1R563ST
		LED MIE-534A2	NPZZM1E534A2
D205		ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
		ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D206		PCB JUMPER D0.6-P5.0	JW5.0T
D210		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D211		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D212		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D213		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D214		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D301		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D302		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D303		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D304		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D305		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D306		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D307		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D313		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D401⚠		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠		SWITCHING DIODE 1N4148	NDTZ001N4148
D402		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D471	C	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	C	SWITCHING DIODE 1N4148	NDTZ001N4148
D681		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D682		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D683		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D684		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D685		PCB JUMPER D0.6-P5.0	JW5.0T
D686		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D687		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D688⚠		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠		SWITCHING DIODE 1N4148	NDTZ001N4148
D690		ZENER DIODE MTZJT-777.5B or	QDTB0MTZJ7R5
		ZENER DIODE DZ-7.5BSBT265	NDTB0DZ7R5BS
D691⚠		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠		SWITCHING DIODE 1N4148	NDTZ001N4148
D694		ZENER DIODE MTZJT-7715B or	QDTB00MTZJ15
		ZENER DIODE DZ-15BSBT265	NDTB00DZ15BS
D695		ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D696		ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8

Ref. No.	Mark	Description	Part No.
		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D697		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D698		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D706		ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D711		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D712		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D713		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D714		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D715		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D716		ZENER DIODE MTZJT-7715B or	QDTB00MTZJ15
		ZENER DIODE DZ-15BSBT265	NDTB00DZ15BS
D717		ZENER DIODE MTZJT-7718A or	QDTA00MTZJ18
		ZENER DIODE DZ-18BSAT265	NDTA00DZ18BS
D722		LED LTL-4214M1 or	NPQZLTL4214M
		LED LAMP 333HT/F45-50K or	NPWK333HTF45
		LED LAMP 333HT/F45-50L or	NPWL333HTF45
		LED LAMP 333HT/F45-50M	NPWM333HTF45
D723		ZENER DIODE MTZJT-773.9B or	QDTB0MTZJ3R9
		ZENER DIODE DZ-3.9BSBT265	NDTB0DZ3R9BS
D724		LED LAMP 333GT/F45-50 or	NPWZ3GTF4550
		LED(GREEN) LTL-4234M1	NPZZ0LTL4234
D901		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
ICS			
IC1		IC:AUDIO PROCESSOR MSP3417G-QG-B8-V3	NSZBA0SP3005
IC151		IC AN17812A	QSZBA0SMS017
IC201⚠		MICRO COMPUTER M3776AMCA-BB3GP	QSZAA0RHT053
IC202⚠		IC(EEP-ROM) M24C04-WMN6 or	NSZAA0SSS005
⚠		IC:EEPROM(4K) BR24L04F-WE2 or	QSZBA0TRM066
⚠		IC:EEPROM CAT24WC04JI or	NSZBA0SBG002
⚠		IC:MEMORY AT24C04N-10SC	NSMMA0SAZ013
IC301⚠		IC:CHROMA/IF 1 CHIP M61209BFP R60T	QSZBB0RMB017
IC401⚠		IC:Y/C/A LA71750EM-MPB-E	QSZBA0RSY020
IC471⚠	C	IC:SECAM LA70100M-MPB	QSZBA0SSY019
IC681⚠		VOLTAGE REGULATOR KIA7805API or	NSBBA0SJY011
⚠		VOLTAGE REGULATOR KA7805A	NSZBA0SF3052
IC703⚠		IC:SWITCH TC4053BF(N) or	QSMBA0STS002
⚠		IC:ANALOG MULTIPLEXERS CD4053BCSJX or	NSZBA0TF3071
⚠		IC:ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
IC801		IC:HIFI LA72648M-MPB-E	QSZBA0RSY033
IC802⚠		IC:SWITCH TC4053BF(N) or	QSMBA0STS002
⚠		IC:ANALOG MULTIPLEXERS CD4053BCSJX or	NSZBA0TF3071
⚠		IC:ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
COILS			
L1		INDUCTOR 10μH-J-26T or	LLAXJATTU100
		INDUCTOR 10μH-K-26T	LLAXKDTKA100
L2		PCB JUMPER D0.6-P5.0	JW5.0T
L3		INDUCTOR 18μH-J-26T or	LLAXJATTU180
		INDUCTOR 18μH-K-26T	LLAXKDTKA180
L4		INDUCTOR 10μH-J-26T or	LLAXJATTU100
		INDUCTOR 10μH-K-26T	LLAXKDTKA100

Ref. No.	Mark	Description	Part No.
L153		INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
		INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
L154		INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
		INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
L155		INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
		INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
L156		INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
		INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
L157		INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
		INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
L201		INDUCTOR 0.10μH-K-26T or	LLAXKATTUR10
		INDUCTOR 0.1μH-M-26T	LLAXMDTKAR10
L301		CHOKE COIL 47μH-K or	LLBD00PKV007
		CHOKE COIL 47μH-K	LLBD00PKV005
L302		INDUCTOR 33μH-J-26T or	LLAXJATTU330
		INDUCTOR 33μH-K-26T	LLAXKDTKA330
L401		INDUCTOR 22μH-J-26T or	LLAXJATTU220
		INDUCTOR 22μH-K-26T	LLAXKDTKA220
L402		INDUCTOR 33μH-J-26T or	LLAXJATTU330
		INDUCTOR 33μH-K-26T	LLAXKDTKA330
L403		INDUCTOR(100μH K) LAP02TA101K or	LLAXKATTU101
		INDUCTOR 100μH-K-26T	LLAXKDTKA101
L404		CHOKE COIL 47μH-K or	LLBD00PKV007
		CHOKE COIL 47μH-K	LLBD00PKV005
L681		CHOKE COIL 47μH-K or	LLBD00PKV007
		CHOKE COIL 47μH-K	LLBD00PKV005
L701		INDUCTOR 12μH-J-26T or	LLAXJATTU120
		INDUCTOR 12μH-K-26T	LLAXKDTKA120
L702		PCB JUMPER D0.6-P5.0	JW5.0T
L802		PCB JUMPER D0.6-P5.0	JW5.0T
L803		INDUCTOR 10μH-J-26T or	LLAXJATTU100
		INDUCTOR 10μH-K-26T	LLAXKDTKA100
L804		INDUCTOR 10μH-J-26T or	LLAXJATTU100
		INDUCTOR 10μH-K-26T	LLAXKDTKA100
L852		INDUCTOR 47μH-K-5FT or	LLARKBSTU470
		INDUCTOR 47μH-K-5FT	LLARKDSKA470
L854		INDUCTOR 0.22μH-K-26T or	LLAXKATTUR22
		INDUCTOR 0.22μH-M-26T	LLAXMDTKAR22
L855		PCB JUMPER D0.6-P5.0	JW5.0T
L856		PCB JUMPER D0.6-P5.0	JW5.0T
L857		INDUCTOR 22μH-K-5FT or	LLARKBSTU220
		INDUCTOR 22μH-K-5FT	LLARKDSKA220
L901		INDUCTOR 0.47μH-J-26T or	LLAXJATTUR47
		INDUCTOR 0.47μH-K-26T	LLAXKDTKAR47
TRANSISTORS			
Q204		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q205		PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q206		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR 2SA1346 or	2SA1346Z
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q207		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q301		TRANSISTOR 2SC2785(F) or	QQSF02SC2785

Ref. No.	Mark	Description	Part No.
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q302		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q303		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q305		TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q401		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR) or	NQS40KTA1266
		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q403		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR) or	NQS40KTA1266
		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q684		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q685⚠		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
⚠		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q686⚠		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q687		TRANSISTOR 2SD1913(R) or	Q2SD1913R***
		TRANSISTOR KTC2026Y	NQWY0KTC2026
Q702		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q703		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR) or	NQS40KTA1266
		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q704		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR 2SA1346 or	2SA1346Z
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q706		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q707		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q708		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785

Ref. No.	Mark	Description	Part No.
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q709		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q710		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q711		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR) or	NQS40KTA1266
		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q851		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR 2SA1346 or	2SA1346Z
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q852		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q853		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q854		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR) or	NQS40KTA1266
		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q855		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q856		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR)	NQS40KTC3198
Q859		RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
		RES. BUILT-IN TRANSISTOR 2SC3400 or	2SC3400Z
		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
		RESISTORS	
R1		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R2		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R7		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R001		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R002		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R151		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R152		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R201		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R202	B	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R203		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R204		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R205		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R206		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R207		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R208		CHIP RES.(1608) 1/10W F 1.5k Ω or	RRXAFR5J1501
		CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H1501
R209		CHIP RES.(1608) 1/10W F 1.5k Ω or	RRXAFR5J1501
		CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H1501
R210		CHIP RES.(1608) 1/10W F 4.7k Ω or	RRXAFR5J4701
		CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H4701

Ref. No.	Mark	Description	Part No.
R211		CHIP RES.(1608) 1/10W F 2.2k Ω or	RRXAFR5J2201
		CHIP RES.(1608) 1/10W F 2.2k Ω	RRXAFR5H2201
R212		CHIP RES.(1608) 1/10W F 2.7k Ω	RRXAFR5H2701
R213		CHIP RES.(1608) 1/10W F 4.7k Ω or	RRXAFR5J4701
		CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H4701
R214		CHIP RES.(1608) 1/10W F 6.8k Ω or	RRXAFR5J6801
		CHIP RES.(1608) 1/10W F 6.8k Ω	RRXAFR5H6801
R215		CHIP RES.(1608) 1/10W F 15k Ω or	RRXAFR5J1502
		CHIP RES.(1608) 1/10W F 15k Ω	RRXAFR5H1502
R216		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R217		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R218		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R219		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R220		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R221		CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R222		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R223		CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R224		CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R226	A,B,D	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R227		CHIP RES.(1608) 1/10W J 47 Ω	RRXAJR5Z0470
R228		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R229		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R230		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R231		CHIP RES.(1608) 1/10W J 330k Ω	RRXAJR5Z0334
R232		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R233		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R234		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R235		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R236		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R237		CHIP RES.(1608) 1/10W J 1M Ω	RRXAJR5Z0105
R238		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R239		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R240		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R241		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R242		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R243		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R244		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R248		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R249		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R250		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R251		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R252		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R253		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R254		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R255		CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R256		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R257		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R258		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R259		PCB JUMPER D0.6-P5.0	JW5.0T
R260		CHIP RES.(1608) 1/10W F 1.5k Ω or	RRXAFR5J1501
		CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H1501
R261		CHIP RES.(1608) 1/10W F 22k Ω or	RRXAFR5J2202
		CHIP RES.(1608) 1/10W F 22k Ω	RRXAFR5H2202
R262		CHIP RES.(1608) 1/10W F 470 Ω or	RRXAFR5J4700
		CHIP RES.(1608) 1/10W F 470 Ω	RRXAFR5H4700
R263		CHIP RES.(1608) 1/10W F 10k Ω or	RRXAFR5J1002
		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H1002
R264		CHIP RES. 1/10W F 3.6k Ω or	RRXAFR5J3601
		CHIP RES.(1608) 1/10W F 3.6k Ω	RRXAFR5H3601
R265		PCB JUMPER D0.6-P5.0	JW5.0T
R266		PCB JUMPER D0.6-P5.0	JW5.0T

Ref. No.	Mark	Description	Part No.
R267		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R268		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R269		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R270		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R271		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R272		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R273		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R274		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R275		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R276		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R277		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R278		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R279		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R280		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R282		PCB JUMPER D0.6-P5.0	JW5.0T
R288		CHIP RES.(1608) 1/10W J 10 Ω	RRXAJR5Z0100
R289		CHIP RES.(1608) 1/10W J 10 Ω	RRXAJR5Z0100
R290		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R292		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R293		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R294		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R295		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R296		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R297		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R301		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R302		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R303		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R304		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R305		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R306		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R307		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R308		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R309		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R310		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R311		CARBON RES. 1/4W J 12 Ω	RCX4JATZ0120
R312		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R313		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R314		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R315		CHIP RES.(1608) 1/10W J 150k Ω	RRXAJR5Z0154
R316		CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R317		CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R318		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R322		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R323		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R324		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R325		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R328		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R329		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R330		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R331		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R332		CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R333		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R334		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R335		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R336		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R337		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R339		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R340		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R401		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R402		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R405		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103

Ref. No.	Mark	Description	Part No.
R406		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R407		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R408		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R409		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R410		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R411		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R412		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R413		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R414		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R415		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R416		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R417		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R418		CHIP RES.(1608) 1/10W J 56k Ω	RRXAJR5Z0563
R420		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R423		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R424		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R425		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R426		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R427		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R428		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R429		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R471	C	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R474		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R475		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R476		CHIP RES.(1608) 1/10W J 1M Ω	RRXAJR5Z0105
R682		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R683		METAL OXIDE FILM RES. 1W J 2.2 Ω or	RN012R2ZU001
		METAL OXIDE FILM RES. 1W J 2.2 Ω	RN012R2DP003
R684		METAL OXIDE FILM RES. 2W J 3.3 Ω or	RN023R3ZU001
		METAL OXIDE FILM RES. 2W J 3.3 Ω	RN023R3DP004
R685		METAL OXIDE FILM RES. 2W J 3.3 Ω or	RN023R3ZU001
		METAL OXIDE FILM RES. 2W J 3.3 Ω	RN023R3DP004
R686		PCB JUMPER D0.6-P5.0	JW5.0T
R690⚠		METAL OXIDE FILM RES. 1W J 33 Ω or	RN01330ZU001
⚠		METAL OXIDE FILM RES. 1W J 33 Ω	RN01330DP003
R691⚠		METAL OXIDE FILM RES. 1W J 18 Ω or	RN01180ZU001
⚠		METAL OXIDE FILM RES. 1W J 18 Ω	RN01180DP003
R692		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R693⚠		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R694		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R696⚠		METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120ZU001
⚠		METAL OXIDE FILM RES. 1W J 12 Ω	RN01120DP003
R697		CARBON RES. 1/4W J 1.5 Ω	RCX4JATZ01R5
R698		CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R699		PCB JUMPER D0.6-P5.0	JW5.0T
R701		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R702		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R703		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R704		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R709		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R710		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R712		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R714		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R723		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R724		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R725		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R726		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R727		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R728		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R729		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R730		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103

Ref. No.	Mark	Description	Part No.
R731		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R732		CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R733		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R734		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R737		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R739		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R740		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R741		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R742		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R743		CHIP RES.(1608) 1/10W J 6.2k Ω	RRXAJR5Z0622
R744		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R745		CHIP RES.(1608) 1/10W J 6.2k Ω	RRXAJR5Z0622
R746		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R747		CHIP RES.(1608) 1/10W J 6.2k Ω	RRXAJR5Z0622
R748		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R750		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R751		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R752		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R753		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R754		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R755		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R756		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R757		CHIP RES.(1608) 1/10W J 1M Ω	RRXAJR5Z0105
R801		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R802		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R803		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R804		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R808		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R809		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R811		CHIP RES.(1608) 1/10W J 56k Ω	RRXAJR5Z0563
R812		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R814		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R851		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R852		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R853		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R854		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R856		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R857		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R858		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R859		CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R860		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R861		CHIP RES.(1608) 1/10W J 330k Ω	RRXAJR5Z0334
R862		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R863		CHIP RES.(1608) 1/10W J 180 Ω	RRXAJR5Z0181
R864		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R865		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R866		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R867		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R868		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R871		CHIP RES.(1608) 1/10W J 1M Ω	RRXAJR5Z0105
R872		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R873		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R874		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R875		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R878		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R879		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R884		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R885		CHIP RES.(1608) 1/10W J 56k Ω	RRXAJR5Z0563
R886		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R887		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R888		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682

Ref. No.	Mark	Description	Part No.
R889		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R890		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R891		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R892		CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R893		CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R895		CHIP RES.(1608) 1/10W J 33 Ω	RRXAJR5Z0330
R896		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R897		CHIP RES.(1608) 1/10W J 33 Ω	RRXAJR5Z0330
R898		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R899		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R900		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R901		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R904		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R905		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R906		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R912		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R913		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R914		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R915		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R916		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R917		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R918		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R919		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R920		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R921		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R922		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R923		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R924		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R930		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R933		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R939		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R942		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R944		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R945		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R947		METAL OXIDE FILM RES. 2W J 4.7 Ω or	RN024R7ZU001
		METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7DP004
R952		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R954		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R959		CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R960		METAL OXIDE FILM RES. 2W J 5.6 Ω or	RN025R6ZU001
		METAL OXIDE FILM RES. 2W J 5.6 Ω	RN025R6DP004
R961		CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R962		CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R963		CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R964		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R965		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R966		CHIP RES.(1608) 1/10W J 160 Ω	RRXAJR5Z0161
R967		CHIP RES.(1608) 1/10W J 160 Ω	RRXAJR5Z0161
R968		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R969		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R970		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
SWITCHES			
SW201		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW202		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW203		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW204		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW205		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW206		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW207		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW208		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW211		LEAF SWITCH LSA-1142-2AU or	SSC0101KB014
		LEAF SWITCH MXS00052MPP0 or	SSC0101MCE01
		LEAF SWITCH MXS00981MPP0	SSC0101MCE02
SW212		ROTARY MODE SWITCH SSS-53MD	SSR0106KB003
MISCELLANEOUS			
CL603		WIRE ASSEMBLY 8P/340MM	WX1T6100-104
RS201		REMOTE RECEIVER PIC-37042LU or	USESJRSKK033
		REMOCON RESEVER MIM-0BM6DKF-C	USESJRSUNT06
BC901		PCB JUMPER D0.6-P5.0	JW5.0T
BC902		PCB JUMPER D0.6-P5.0	JW5.0T
BC903		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
JK151		MINI JACK HSJ2000-01-010 or	JYSL010HD002
		MINI JACK MSJ-2000 or	JYSL010LY003
		PHONE JACK DP3-25-7-001	JYSL010RP002
JK701		RCA JACK(YELLOW) MTJ-032-05B-20 or	JXRL010LY038
		RCA JACK 1P:YELLOW DA1-05A3N0S001	JXRL010RP036
JK702		RCA JACK(WHITE) MTJ-032-05B-22 or	JXRL010LY039
		RCA JACK 1P : WHITE DA1-05A4N0S001	JXRL010RP037
JK703		SKIRT JACK 21P HRC-21V-02P or	JXGL210RP001
		SKIRT JACK 21P MRC-021-02 or	JXGL210LY001
		SKIRT JACK 21P MRC-021V-02 3.4 ABS or	JXGL210LY005
		SKIRT JACK 21P DSS1020NPC001	JXGL210RP002
JK704		RCA JACK(RED) MTJ-032-05A-21 or	JYRL010LY010
		RCA JACK 1P:RED(SW) DA1-05A2N1S001	JYRL010RP017
JK902		RCA JACK MSP-241V-05	JXRL010LY036
TB3		X5 HEAD SHIELD T6100EA	1EM320042
TB7		LED HOLDER T6100EA	1EM420412
TB13		BUSH, LED(F) H3700UD	0VM409508
TP001		PCB JUMPER D0.6-P10.0	JW10.0T
TP002		PCB JUMPER D0.6-P15.0	JW15.0T
TP003		PCB JUMPER D0.6-P30.0	JW30.0T
TP007		PCB JUMPER D0.6-P15.0	JW15.0T
TP008		PCB JUMPER D0.6-P30.0	JW30.0T
TU1	A,B,D	TUNER UNIT TMQZ2-303A	UTUNPLGAL013
TU1	C	TUNER UNIT TMQZ2-413A	UTUNPSGAL009
X1		X'TAL 18.432MHz	FXD186LLN001
X201		X'TAL 32.768kHz(20PPM) or	FXC323LJNY01
		X'TAL 32.768kHz(20PPM) or	FXC323LCT001
		X'TAL 32.768kHz(20PPM) or	FXC323LDS002
		X'TAL 32.768kHz(20PPM)	FXC323LQUA01
X202		X'TAL 12.000MHz	FXD126LDS001
X301		X'TAL 4.433619MHz or	FXB445LNL001
		X'TAL 4.433619MHz or	FXB445LDS002
		X'TAL 4.433619MHz	FXB445LCHE01
X401		X'TAL 4.433619MHz or	FXC445LLN001
		X'TAL 4.433619MHz	1811388

JUNCTION-A CBA

Ref. No.	Description	Part No.
	JUNCTION-A CBA Consists of the following	---------
CONNECTOR		
CN603	CONNECTOR, 8P TUC-P08X-B1	JCTUS08TG001

SENSOR CBA

Ref. No.	Description	Part No.
	SENSOR CBA Consists of the following	1ESA10277
	TRANSISTORS	
Q201	PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q202	PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12

MPS CBA

Ref. No.	Mark	Description	Part No.
	A,C,D B	MPS CBA MPS CBA Consists of the following	1ESA10227 1ESA10332
		SUB CBA (MPS-A) FUNCTION CBA (MPS-B) CRT CBA (MPS-C) JUNCTION-B CBA JUNCTION-C CBA JUNCTION-D CBA JUNCTION-E CBA	---------- ---------- ---------- ---------- ---------- ---------- ----------

SUB CBA

Ref. No.	Mark	Description	Part No.
		SUB CBA (MPS-A) Consists of the following	---------
		CAPACITORS	
C532⚠		METALLIZED FILM CAP. 0.12μF/200V J or	CT2D124F7003
⚠		P.P. CAP 0.12μF/200V J or	CA2D124VC012
⚠		PP CAP. 0.12μF/250V J	CT2E124MS041
C533⚠		P.P. CAP 0.0082μF/1.6K J or	CA3C822VC011
⚠		PP CAP. 0.0082μF/1.6KV J or	CT3C822MS039
⚠		METALLIZED FILM CAP. 0.0082μF/1.6KV J or	CT3C822F7004
⚠		POLYPROPYLENE FILM CAP. 0.0082μF/ 1.6KV	CT3C822HJE16
C534		METALLIZED FILM CAP. 0.12μF/200V J or	CT2D124F7003
		P.P. CAP 0.12μF/200V J or	CA2D124VC012
		PP CAP. 0.12μF/250V J	CT2E124MS041
C552		MYLAR CAP. 0.22μF/50V J or	CMA1JJS00224
		FILM CAP.(P) 0.22μF/50V J	CA1J224MS029
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	CE1EMZPDL102
		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	CE1GMASTL331
C560		FILM CAP.(P) 0.01μF/50V J or	CMA1JJS00103
		FILM CAP.(P) 0.01μF/50V J	CA1J103MS029
C574⚠		ELECTROLYTIC CAP. 4.7μF/250V M or	CE2EMASDL4R7
⚠		ELECTROLYTIC CAP. 4.7μF/250V M	CE2EMASTL4R7
C577		FILM CAP.(P) 0.022μF/50V J or	CMA1JJS00223
		FILM CAP.(P) 0.022μF/50V J	CA1J223MS029
C578		ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C584		PCB JUMPER D0.6-P5.0	JW5.0T
C586		ELECTROLYTIC CAP. 4.7μF/50V M or	CE1JMASDL4R7
		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASTL4R7
C590		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C591⚠		ELECTROLYTIC CAP. 4.7μF/50V M or	CE1JMASDL4R7

Ref. No.	Mark	Description	Part No.
⚠		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASTL4R7
C592⚠		ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
⚠		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C594⚠		ELECTROLYTIC CAP. 100μF/160V M or	CE2CMZPDL101
⚠		ELECTROLYTIC CAP. 100μF/160V M or	CE2CMZPTL101
⚠		ELECTROLYTIC CAP. 100μF/160V M W/F	CE2CMZNTL101
C595⚠		CERAMIC CAP. BN 1200pF/2KV or	CCD3DKA0B122
⚠		CERAMIC CAP. 1200pF/2KV or	CA3D122PAN04
⚠		CERAMIC CAP RB 1200pF/2KV	CA3D122TE006
C597		ELECTROLYTIC CAP. 1μF/160V M or	CE2CMASDL1R0
		ELECTROLYTIC CAP. 1μF/160V M	CE2CMASTL010
C598		ELECTROLYTIC CAP. 1μF/250V M or	CE2EMASDL1R0
		ELECTROLYTIC CAP. 1μF/250V M or	CE2EMASDL010
		ELECTROLYTIC CAP. 1μF/250V M	CE2EMASTL010
C605⚠		METALLIZED FILM CAP. 0.1μF/250V or	CT2E104MS037
⚠		FILM CAP.(MP) 0.1μF/250V K or	CT2E104DC011
⚠		METALLIZED FILM CAP. 0.1μF/275V K or	CT2E104HJE06
⚠		LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C610⚠		ELECTROLYTIC CAP. 150μF/400V(LQ TYPE)	CA2H151NC013
C611		CERAMIC CAP. BN J 220pF/2KV or	CCD3DKA0B221
		CERAMIC CAP. 220pF/2KV or	CA3D221PAN04
		CERAMIC CAP. RB 220pF/2KV	CA3D221TE006
C612		FILM CAP.(P) 0.039μF/50V J or	CMA1JJS00393
		FILM CAP.(P) 0.039μF/50V J	CA1J393MS029
C613		FILM CAP.(P) 0.0012μF/50V J or	CMA1JJS00122
		FILM CAP.(P) 0.0012μF/50V J	CA1J122MS029
C614		FILM CAP.(P) 0.068μF/50V J or	CMA1JJS00683
		FILM CAP.(P) 0.068μF/50V J	CA1J683MS029
C615		CERAMIC CAP. BN 560pF/2KV or	CCD3DKA0B561
		CERAMIC CAP. 560pF/2KV or	CA3D561PAN04
		CERAMIC CAP. RB 560pF/2KV	CA3D561TE006
C616		ELECTROLYTIC CAP. 100μF/160V M or	CE2CMZPDL101
		ELECTROLYTIC CAP. 100μF/160V M or	CE2CMZPTL101
		ELECTROLYTIC CAP. 100μF/160V M W/F	CE2CMZNTL101
C617		ELECTROLYTIC CAP. 470μF/35V M or	CE1GMASDL471
		ELECTROLYTIC CAP. 470μF/35V M	CE1GMASTL471
C618		ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
		ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C619		ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
		ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C620		ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
		ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C622⚠		FILM CAP.(P) 0.0047μF/50V J or	CMA1JJS00472
⚠		FILM CAP.(P) 0.0047μF/50V J	CA1J472MS029
C623		FILM CAP.(P) 0.018μF/50V J or	CMA1JJS00183
		FILM CAP.(P) 0.018μF/50V J	CA1J183MS029
C624		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C625		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C626		ELECTROLYTIC CAP. 4.7μF/50V M or	CE1JMASDL4R7
		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASTL4R7
C628		CERAMIC CAP. B K 1500pF/50V	CCD1JKS0B152
C632		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C633		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C638⚠		SAFETY CAP. 2200pF/250V KX	CA2E222MR050
C640		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471

Ref. No.	Mark	Description	Part No.
C642		CERAMIC CAP.(AX) B J 1000pF/50V	CCA1JJT0B102
C643		ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
		ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C650		CERAMIC CAP.(AX) B K 2200pF/50V	CA1J222TU011
C661		ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C671		CERAMIC CAP. B K 1500pF/500V	CCD2JKS0B152
C675⚠		METALLIZED FILM CAP. 0.1µF/250V or	CT2E104MS037
⚠		FILM CAP.(MP) 0.1µF/250V K or	CT2E104DC011
⚠		METALLIZED FILM CAP. 0.1µF/275V K or	CT2E104HJE06
⚠		LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C1604		ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
		ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C1645		CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C1647		ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1654		CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C1670		ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
		ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
CONNECTORS			
CN505		WIRE ASSEMBLY 1P/120MM	WX1T6100-001
CN571		CONNECTOR BASE, 5P TV-50P-05-V3 or	J3TVC05TG002
		CONNECTOR BASE, 5P RTB-1.5-5P	J3RTC05JG001
CN601		CONNECTOR BASE, 2P TV-50P-02-V3 or	J3TVC02TG002
		CONNECTOR BASE, 2P RTB-1.5-2P	J3RTC02JG001
CN1803		CONNECTOR BASE, 8P TUC-P08P-B1	J3TUA08TG001
DIODES			
D552		DIODE FR104-B or	NDLZ000FR104
		DIODE FR104BB	NDL1000FR104
D572⚠		DIODE FR104-B or	NDLZ000FR104
⚠		DIODE FR104BB	NDL1000FR104
D583		DIODE FR154 or	NDLZ000FR154
		FAST RECOVERY DIODE ERB44-02 or	QDPZ0ERB4402
		DIODE FR154BD	NDL1000FR154
D584		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D585		ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D586		PCB JUMPER D0.6-P5.0	JW5.0T
D591⚠		ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
⚠		ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D592		ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
		ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D593		DIODE FR104-B or	NDLZ000FR104
		DIODE FR104BB	NDL1000FR104
D595⚠		ZENER DIODE MTZJT-7720C or	QDTC00MTZJ20
⚠		ZENER DIODE DZ-20BSCT265	NDTC00DZ20BS
D596⚠		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠		SWITCHING DIODE 1N4148	NDTZ001N4148
D597⚠		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠		SWITCHING DIODE 1N4148	NDTZ001N4148
D598⚠		DIODE FR104-B or	NDLZ000FR104
⚠		DIODE FR104BB	NDL1000FR104
D602		ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
		ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D603⚠		DIODE 1N5409-B/P or	NDLZ001N5409
⚠		DIODE 1N5409-BH	NDL1001N5409
D604⚠		DIODE 1N5409-B/P or	NDLZ001N5409
⚠		DIODE 1N5409-BH	NDL1001N5409
D605⚠		DIODE 1N5409-B/P or	NDLZ001N5409

Ref. No.	Mark	Description	Part No.
⚠		DIODE 1N5409-BH	NDL1001N5409
D606⚠		DIODE 1N5409-B/P or	NDLZ001N5409
⚠		DIODE 1N5409-BH	NDL1001N5409
D607		ZENER DIODE MTZJT-7724C or	QDTC00MTZJ24
		ZENER DIODE DZ-24BSCT265	NDTC00DZ24BS
D608		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D609		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D610		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D611		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D613⚠		FAST RECOVERY DIODE FE201-6	QDLZ00FE2016
D614⚠		DIODE FR154 or	NDLZ000FR154
⚠		FAST RECOVERY DIODE ERB44-02 or	QDPZ0ERB4402
⚠		DIODE FR154BD	NDL1000FR154
D615⚠		SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠		SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D616		SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
		SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D617⚠		DIODE FR154 or	NDLZ000FR154
⚠		FAST RECOVERY DIODE ERB44-02 or	QDPZ0ERB4402
⚠		DIODE FR154BD	NDL1000FR154
D618⚠		SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠		SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D619		DIODE FR104-B or	NDLZ000FR104
		DIODE FR104BB	NDL1000FR104
D620⚠		ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
⚠		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D621⚠		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠		SWITCHING DIODE 1N4148	NDTZ001N4148
D622		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D623		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D626		ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
		ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D627		ZENER DIODE MTZJT-7722B or	QDTB00MTZJ22
		ZENER DIODE DZ-22BSBT265	NDTB00DZ22BS
D628		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D634		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D635		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D636		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D639		ZENER DIODE MTZJT-7715B or	QDTB00MTZJ15
		ZENER DIODE DZ-15BSBT265	NDTB00DZ15BS
D640		DIODE 1ZC33 or	QDQZ0001ZC33
		ZENER DIODE RD33FB	QDQZ000RD33F
D642		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D645		SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
		SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D657		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D659		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D660		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D663		ZENER DIODE MTZJT-776.8A or	QDTA0MTZJ6R8

Ref. No.	Mark	Description	Part No.
		ZENER DIODE DZ-6.8BSAT265	NDTA0DZ6R8BS
D664		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D1603		ZENER DIODE MTZJT-775.6C or	QDTC0MTZJ5R6
		ZENER DIODE DZ-5.6BSCT265	NDTC0DZ5R6BS
D1604		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D1605		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D1613⚠		RECTIFIER DIODE ERA15-02	AERA1502****
D1625		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D1803		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
ICS			
IC551⚠		VERTICAL OUTPUT IC LA78040A or	QSBBA0SSY003
⚠		VERTICAL OUTPUT IC AN15524A	QSZBA0SMS019
IC601⚠		PHOTOCOUPLER PS2561L1-1-VL or	QPEL2561L11V
⚠		PHOTOCOUPLER PS2561L1-1-VW	QPEW2561L11V
IC0602		VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC0603		IC:SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
IC0604		IC:SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
COILS			
L505⚠		CHOKE COIL 47μH-K or	LLBD00PKV007
⚠		CHOKE COIL 47μH-K	LLBD00PKV005
L601⚠		LINE FILTER ELF21V010A	LLBG00ZMS045
L1613		PCB JUMPER D0.6-P5.0	JW5.0T
L1621		PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS			
Q571⚠		TRANSISTOR TT2140LS-YB11 or	QQZZ00TT2140
⚠		TRANSISTOR 2SC5885000RF	QQZZ02SC5885
Q591⚠		TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q592⚠		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
⚠		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
⚠		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q601⚠		MOS FET 2SK3798(Q)	QFWZ2SK3798Q
Q602⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
⚠		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q604⚠		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
⚠		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
⚠		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q605		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q606		TRANSISTOR 2SA950(O) or	Q2SA9500TPE2
		TRANSISTOR 2SA950(Y) or	Q2SA950YTPE2
		TRANSISTOR KTA1271(Y)	NQSY0KTA1271
Q607		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785

Ref. No.	Mark	Description	Part No.
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q609		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q613		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1610		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR) or	NQS40KTA1266
		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1611		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1612		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1615		TRANSISTOR 2SD400(F) or	QQUF002SD400
		TRANSISTOR 2SD400(E)	QQUE002SD400
Q1616		RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
		RES. BUILT-IN TRANSISTOR 2SC3400 or	2SC3400Z
		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q1617		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
RESISTORS			
R501		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R504		CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R541		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R542		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R543		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R551		CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R555		PCB JUMPER D0.6-P5.0	JW5.0T
R556		CARBON RES. 1/4W J 1 Ω	RCX4JATZ01R0
R557		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R558		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R560		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R561		CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R562		CARBON RES. 1/4W J 6.8 Ω	RCX4JATZ06R8
R563		CARBON RES. 1/4W J 6.8 Ω	RCX4JATZ06R8
R564		CARBON RES. 1/4W J 6.8 Ω	RCX4JATZ06R8
R565⚠		CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R566⚠		CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R567⚠		PCB JUMPER D0.6-P5.0	JW5.0T
R568⚠		PCB JUMPER D0.6-P5.0	JW5.0T
R569		METAL OXIDE FILM RES. 1W J 1k Ω or	RN01102ZU001
		METAL OXIDE FILM RES. 1W J 1k Ω	RN01102DP003
R570		METAL OXIDE FILM RES. 1W J 1k Ω or	RN01102ZU001
		METAL OXIDE FILM RES. 1W J 1k Ω	RN01102DP003
R571		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R572		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R573		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R574		PCB JUMPER D0.6-P5.0	JW5.0T
R576		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R577		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R578⚠		CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3

Ref. No.	Mark	Description	Part No.
R579		PCB JUMPER D0.6-P5.0	JW5.0T
R580		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R581		PCB JUMPER D0.6-P5.0	JW5.0T
R583⚠		METAL RESISTER. 2W J 2.7 Ω or	RN022R7ZU001
⚠		METAL OXIDE FILM RES. 2W J 2.7 Ω	RN022R7DP004
R584⚠		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R585		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R586		PCB JUMPER D0.6-P5.0	JW5.0T
R587		CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R588		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R589		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R590		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R591⚠		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R592⚠		CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R593		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R594		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R595		CARBON RES. 1/4W J 270k Ω	RCX4JATZ0274
R596		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R598⚠		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R599⚠		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R601⚠		ANTI-SURGE RESISTOR 1/2W J 3.3M Ω or	RMX2335KA011
⚠		CARBON RES. 1/2W J 3.3M Ω or	RCX2335DP001
⚠		CARBON RES. 1/2W K 3.3M Ω or	RCX2335FS001
⚠		GLASS GLAZE RES. 1/2W J 3.3M Ω	RXX2JZLZ0335
R602⚠		CEMENT RES. 3W K 1.5 Ω or	RW031R5PG007
⚠		CEMENT RESISTOR 3W K 1.5 Ω	RW031R5PAK10
R603		CEMENT RESISTOR 5W K 0.68 Ω or	RW05R68PG001
		CEMENT RES. 5W K 0.68 Ω or	RW05R68DP005
		CEMENT RESISTOR 5W J 0.68 Ω	RW05R68PAK10
R604		CARBON RES. 1/4W J 560k Ω	RCX4JATZ0564
R605		CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R606		CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R607		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R608		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R609		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R610		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R611		PCB JUMPER D0.6-P5.0	JW5.0T
R612		CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R613		CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R614⚠		CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R616		PCB JUMPER D0.6-P5.0	JW5.0T
R617		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R618		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R619		CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R620		CEMENT RES. 5W J 3.3k Ω or	RW05332DP008
		CEMENT RES. 5W J 3.3k Ω or	RW05332PG004
		CEMENT RESISTOR 5W J 3.3k Ω	RW05332PAK13
R621		CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R622		CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R623		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R624		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R625		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R629⚠		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R630⚠		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R631⚠		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R632⚠		CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R633⚠		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R634		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R635		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R637⚠		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R638⚠		PCB JUMPER D0.6-P5.0	JW5.0T

Ref. No.	Mark	Description	Part No.
R639		CARBON RES. 1/2W J 1.2k Ω or	RCX2JZQZ0122
		CARBON RES. 1/2W J 1.2k Ω	RCX2122KA013
R640		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R641		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R642		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R644		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R645		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R646		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R647		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R649		CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R650		PCB JUMPER D0.6-P5.0	JW5.0T
R654		CARBON RES. 1/2W J 4.7 Ω or	RCX2JZQZ04R7
		CARBON RES. 1/2W J 4.7 Ω	RCX24R7KA013
R655		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R658		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R664		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R665		CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R666		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R667		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R671⚠		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1627		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R1647		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R1648		CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R1649		CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R1650		CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1651		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1652		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1653		CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R1654		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1655		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1656		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1657		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1659		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1660		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1661		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1671		CARBON RES. 1/4W G 5.6k Ω	RCX4GATZ0562
R1672		CARBON RES. 1/4W G 15k Ω	RCX4GATZ0153
R1675		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1676		METAL OXIDE FILM RES. 2W J 3.9 Ω or	RN023R9DP004
		METAL OXIDE FILM RES. 2W J 3.9 Ω	RN023R9ZU001
R1677		CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1678		CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R1679		CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1684		CARBON RES. 1/4W G 220 Ω	RCX4GATZ0221
R1685		CARBON RES. 1/4W G 8.2k Ω	RCX4GATZ0822
R1686		CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R1687		CARBON RES. 1/4W G 5.6k Ω	RCX4GATZ0562
R1688		CARBON RES. 1/4W G 15k Ω	RCX4GATZ0153
R1689		CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R1691		CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1692		PCB JUMPER D0.6-P5.0	JW5.0T
R1697		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1698		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
SWITCHES			
SW601 ⚠		POWER SWITCH SDKVA30100 or	SPP0AZZAL001
⚠		POWER SWITCH AAPY2211	SPP0AAZMS003
MISCELLANEOUS			
BC571		BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC600		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC604		BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026

Ref. No.	Mark	Description	Part No.
BC605		BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC606		BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC1602		PCB JUMPER D0.6-P5.0	JW5.0T
BC1603		PCB JUMPER D0.6-P5.0	JW5.0T
CL501		WIRE ASSEMBLY 3P/380MM	WX1T6100-101
CL503		WIRE ASSEMBLY 8P/270MM	WX1T6100-103
CL802		WIRE ASSEMBLY 11P/400MM	WX1T6100-106
CL1602		WIRE ASSEMBLY 9P/220MM	WX1T6100-105
F601⚠		FUSE 4A/250V 215004	PAGF20BAG402
FH601		FUSE HOLDER MSF-015 or	XH01Z00LY001
		FUSE HOLDER FH-V-03078	XH01Z00DK001
FH602		FUSE HOLDER MSF-015 or	XH01Z00LY001
		FUSE HOLDER FH-V-03078	XH01Z00DK001
PB1⚠		POWER PCB HOLDER T6100EA	1EM020028
PB2		X5 PAL POW HEAT SINK PJL T6100EA	1EM420320A
PB4		X5 H/V HEAT SINK PJN T6100EA	1EM420181A
PB10		X5 H/V HEAT SINK PJQ T6100EA	1EM420180A
PB11		X5 PAL DVD HEAT SINK PJM T6100EA	1EM420183A
PL1		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
PL2		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
PS601⚠		THERMISTOR ZPB31BL9R0A or	QNWZ31BL9R0A
⚠		PTC THERMISTOR WMZ71-9R0N265	NNWZWMZ719R0
SA601⚠		SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
T571⚠		FLYBACK TRANS BSC22-2697S	LTF00CPS2055
T572⚠		H0RIZONTAL DRIVE TRANS LP2-005	LTH00CPA5005
T601⚠		SWITCHING TRANS 04737	LTT00EPKT151
TM601		EYELET TYPE D-1	0VM406868
TM602		EYELET TYPE D-1	0VM406868
TP503		PCB JUMPER D0.6-P5.0	JW5.0T
VR601⚠		CARBON P.O.T. 10k Ω B	VRCB103HH014
W601⚠	A,C,D	AC CORD PE8B2CG1H0A-057	WAE0172LW003
W601⚠	B	AC CORD PE8B2V91H0A-05B	WAB0182LW011

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA (MPS-B) Consists of the following	---------
	CONNECTORS	
CN1401	TWG CONNECTOR 07P TWG-P07X	JCTWA07TG001
CN1801	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
	STRAIGHT PIN HEADER, 2P 173981-2	1770258
	DIODES	
D1401	LED LTL-4214M1 or	NPQZLTL4214M
	LED LAMP 333HT/F45-50K or	NPWK333HTF45
	LED LAMP 333HT/F45-50L or	NPWL333HTF45
	LED LAMP 333HT/F45-50M	NPWM333HTF45
	COILS	
L1801	INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
L1802	INDUCTOR 2.2μH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2μH-K-5FT	LLARKDSKA2R2
	RESISTORS	
R1401	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R1402	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R1403	CARBON RES. 1/4W G 2.2k Ω	RCX4GATZ0222
R1404	CARBON RES. 1/4W G 2.7k Ω	RCX4GATZ0272
R1405	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R1406	CARBON RES. 1/4W G 6.8k Ω	RCX4GATZ0682
R1407	CARBON RES. 1/4W G 15k Ω	RCX4GATZ0153

Ref. No.	Description	Part No.
	SWITCHES	
SW1401	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1402	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1403	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1404	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1405	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1406	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1407	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
SW1408	TACT SWITCH SKQNAED010 or	SST0101AL055
	TACTILE SWITCH KSHG612BT	SST0101HH027
	MISCELLANEOUS	
TB7	LED HOLDER T6100EA	1EM420412

CRT CBA

Ref. No.	Description	Part No.
	CRT CBA (MPS-C) Consists of the following	---------
	CAPACITORS	
C504	CERAMIC CAP.(AX) B K 270pF/50V	CCA1JKT0B271
C505	CERAMIC CAP.(AX) B K 270pF/50V	CCA1JKT0B271
C506	CERAMIC CAP.(AX) B K 270pF/50V	CCA1JKT0B271
C508	ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C509	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV or	CA3D102MR030
	CERAMIC CAP. B K 1000pF/2KV	CCD3DKD0B102
C510	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
	CONNECTOR	
CN501A	CONNECTOR PIN, 1P RT-01N-2.3A	1730688
	DIODES	
D501	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D502	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D503	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
	COILS	
L501	INDUCTOR 180μH-J-5FT or	LLARJCSTU181
	INDUCTOR 180μH-K	LLARKDQKA181
	TRANSISTORS	
Q501	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR KTC3207	NQSZ0KTC3207
Q502	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR KTC3207	NQSZ0KTC3207
Q503	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR KTC3207	NQSZ0KTC3207
	RESISTORS	
R502	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R503	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R507	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R508	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R509	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R510	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682

Ref. No.	Description	Part No.
R511	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R512	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R513	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R514	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R515	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R516⚠	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
⚠	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153ZU001
R517⚠	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
⚠	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153ZU001
R518⚠	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
⚠	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153ZU001
R519	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R520	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R521	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R523	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
	MISCELLANEOUS	
CL504	WIRE ASSEMBLY 5P/360MM	WX1T6100-102
JK501⚠	CRT SOCKET ISMS02S	JSCC220PK003

JUNCTION-B CBA

Ref. No.	Description	Part No.
	JUNCTION-B CBA Consists of the following	----------
	CONNECTOR	
CN1802	CONNECTOR, 11P TUC-P11X-B1	JCTUS11TG001

JUNCTION-C CBA

Ref. No.	Description	Part No.
	JUNCTION-C CBA Consists of the following	----------
	CONNECTOR	
CN1602	CONNECTOR, 9P TUC-P09X-B1	JCTUS09TG001

JUNCTION-D CBA

Ref. No.	Description	Part No.
	JUNCTION-D CBA Consists of the following	----------
	CONNECTOR	
CN503	CONNECTOR, 8P TUC-P08X-B1	JCTUS08TG001

JUNCTION-E CBA

Ref. No.	Description	Part No.
	JUNCTION-E CBA Consists of the following	----------
	CONNECTOR	
CN504	CONNECTOR, 5P TUC-P05X-B1	JCTUS05TG001

TEXT CBA

Ref. No.	Description	Part No.
	TEXT CBA Consists of the following	1ESA10316
	CAPACITORS	
C901	ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C902	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C903	ELECTROLYTIC CAP. 0.1μF/50V M or	CE1JMASDLR10
	ELECTROLYTIC CAP. 0.1μF/50V M or	CE1JMASDL0R1
	ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASTL0R1
C904	ELECTROLYTIC CAP. 0.1μF/50V M or	CE1JMASDLR10
	ELECTROLYTIC CAP. 0.1μF/50V M or	CE1JMASDL0R1
	ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASTL0R1
C905	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C906	ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASTL101
C916	CERAMIC CAP.(AX) CH J 18pF/50V	CCA1JJTCH180
C917	CERAMIC CAP.(AX) CH J 18pF/50V	CCA1JJTCH180
C920	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C921	ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASTL101
C922	ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASTL101
C923	ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASTL101
C926	CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
	CONNECTORS	
CN901	CONNECTOR, 8P TUC-P08X-B1	JCTUS08TG001
CN902	CONNECTOR, 6P TUC-P06X-B1	JCTUS06TG001
	DIODES	
D901	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D902	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D903	ZENER DIODE MTZJT-773.6B or	QDTB0MTZJ3R6
	ZENER DIODE DZ-3.6BSBT265	NDTB0DZ3R6BS
D904	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D905	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D906	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D907	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D908	ZENER DIODE MTZJT-773.3B or	QDTB0MTZJ3R3
	ZENER DIODE DZ-3.3BSBT265	NDTB0DZ3R3BS
D909	ZENER DIODE MTZJT-773.3B or	QDTB0MTZJ3R3
	ZENER DIODE DZ-3.3BSBT265	NDTB0DZ3R3BS
	IC	
IC901	IC:TEXT SAA5265	NSZBA0SPH017
	COILS	
L901	INDUCTOR 10μH-J-26T or	LLAXJATTU100
	INDUCTOR 10μH-K-26T	LLAXKDTKA100
L902	INDUCTOR 10μH-J-26T or	LLAXJATTU100
	INDUCTOR 10μH-K-26T	LLAXKDTKA100
	TRANSISTORS	
Q901	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199

Ref. No.	Description	Part No.
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
	RESISTORS	
R901	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R902	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R903	CARBON RES. 1/4W J 24k Ω	RCX4JATZ0243
R904	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R905	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R906	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R908	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R911	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R912	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R913	PCB JUMPER D0.6-P5.0	JW5.0T
R914	PCB JUMPER D0.6-P5.0	JW5.0T
R915	PCB JUMPER D0.6-P5.0	JW5.0T
R916	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R918	METAL OXIDE FILM RES. 2W J 56 Ω or	RN02560ZU001
	METAL OXIDE FILM RES. 2W J 56 Ω	RN02560DP004
R919	PCB JUMPER D0.6-P5.0	JW5.0T
R920	PCB JUMPER D0.6-P5.0	JW5.0T
R921	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R922	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R923	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R924	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R925	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R926	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R927	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
	MISCELLANEOUS	
X901	X'TAL 12.000MHz or	FXD126LDS001
	X'TAL 12.000MHz	FXD126LLN001

DECK MECHANISM SECTION

21" COLOR TV/DVD/VCR COMBINATION

TVD-A2104PT
TVD-B2104PT
TVD-C2104PT
TVD-D2104PT

Sec. 2: Deck Mechanism Section

- **Standard Maintenance**
- **Mechanism Alignment Procedures**
- **Disassembly / Assembly of Mechanism**
- **Deck Exploded Views**
- **Deck Parts List**

TABLE OF CONTENTS

STANDARD MAINTENANCE

Service Schedule of Components

This maintenance chart shows you the standard of replacement and cleaning time for each part.
Because those may replace depending on environment and purpose for use, use the chart for reference.

h: Hours ○: Cleaning ●: Replace

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

Notes:

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

Cleaning

Cleaning of Video Head

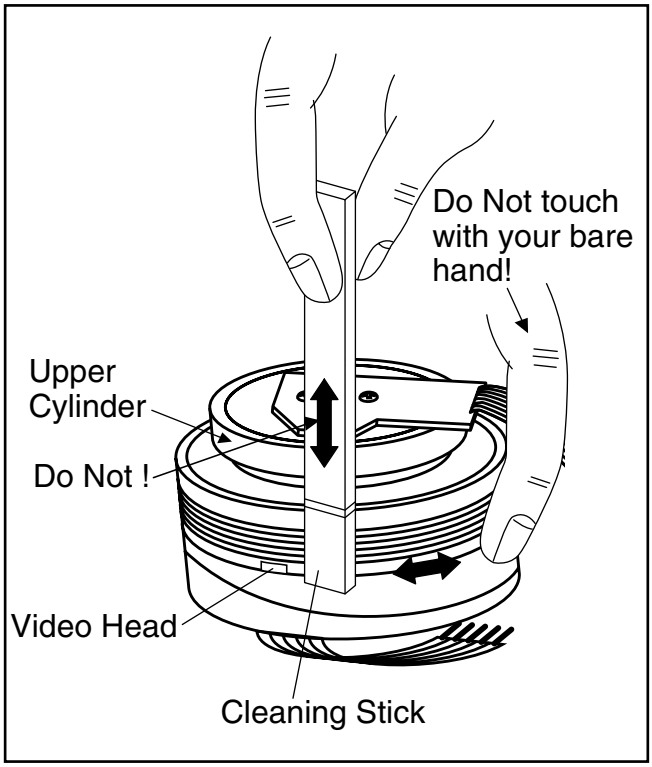
Clean the head with a head cleaning stick or chamois cloth.

Procedure

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

Notes:

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



Cleaning of ACE Head

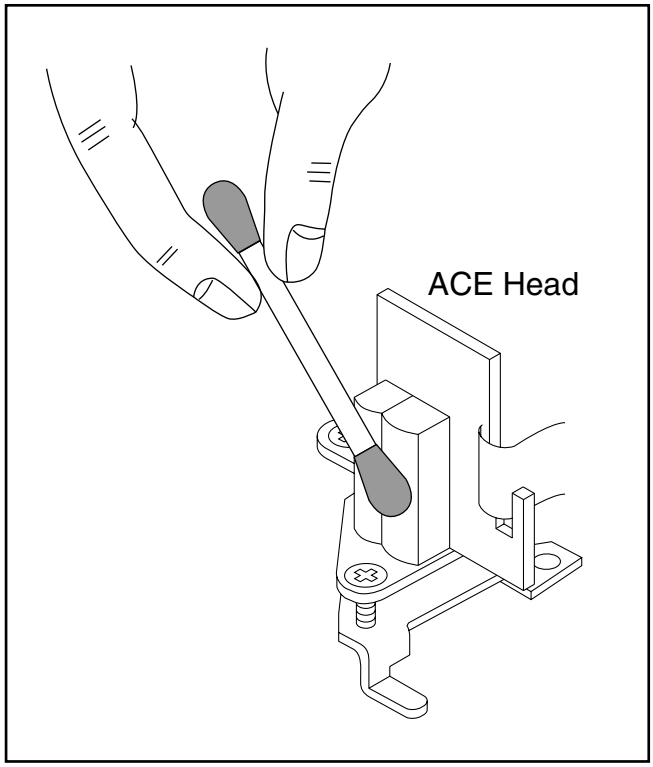
Clean the head with a cotton swab.

Procedure

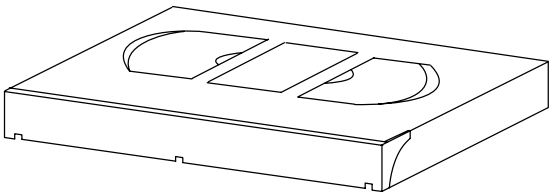
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

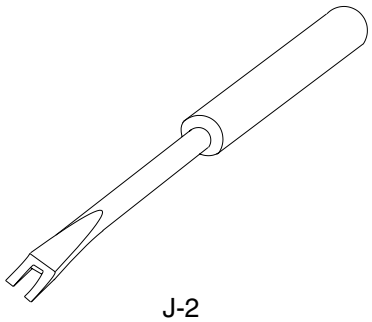
1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



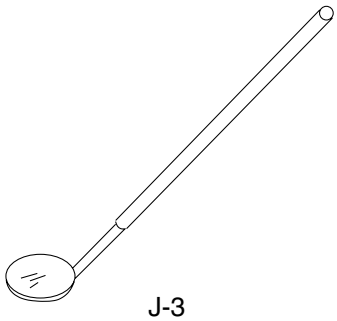
SERVICE FIXTURE AND TOOLS



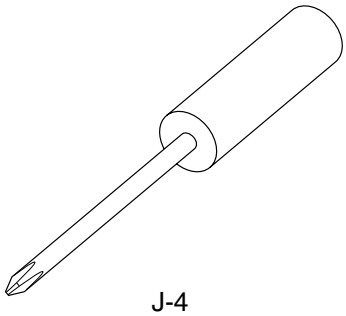
J-1-1, J-1-2



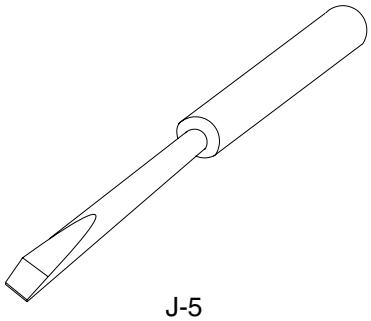
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL6A	Head Adjustment of ACE Head
J-1-2	Alignment Tape	FL6N8 (2 Head model) FL6NS8 (4 Head model)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

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

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

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

To unload a cassette tape manually:

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

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

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

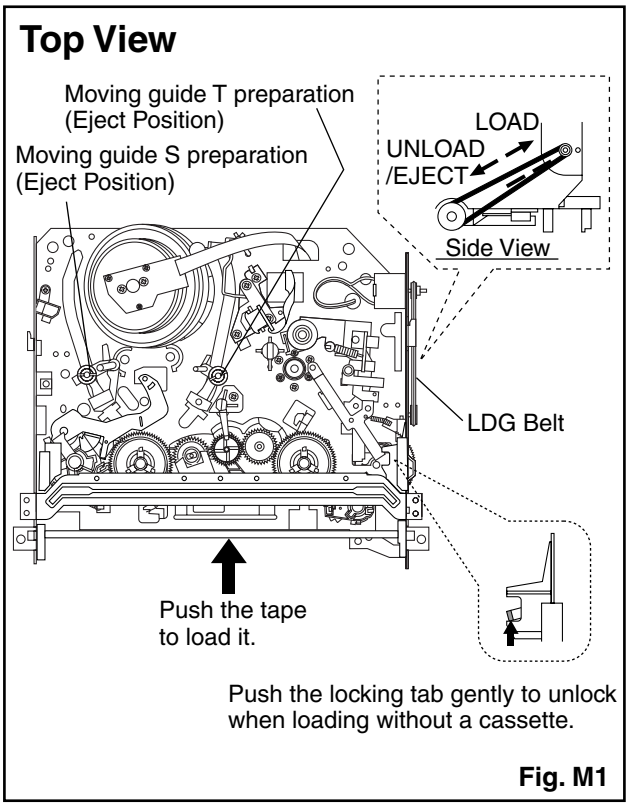


Fig. M1

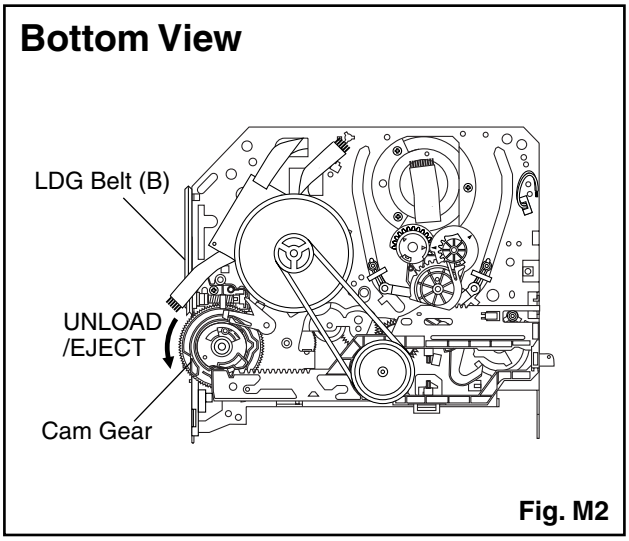


Fig. M2

1. Tape Interchangeability Alignment

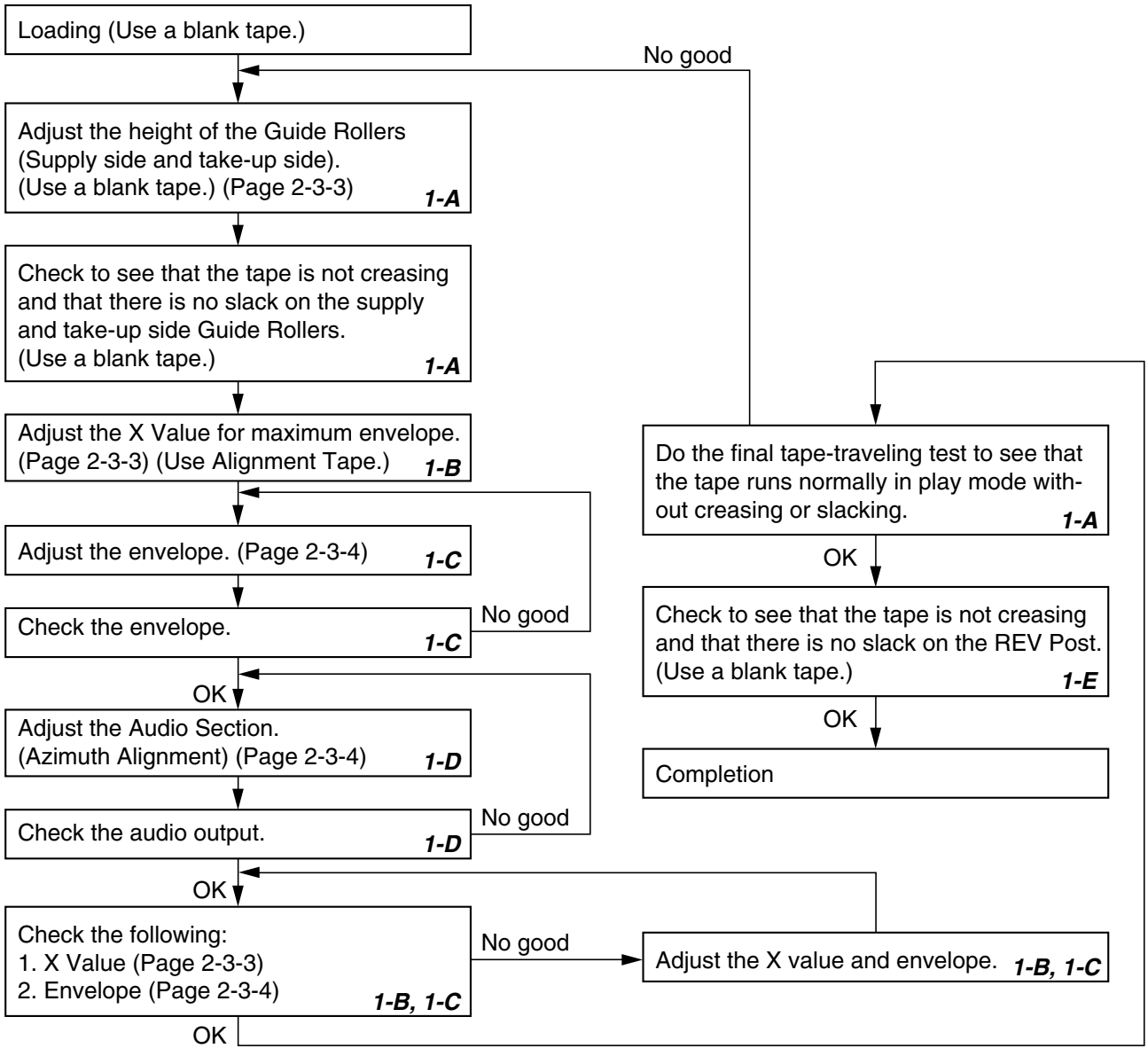
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL6NS8)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

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

Flowchart of Alignment for tape traveling



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

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

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

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

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

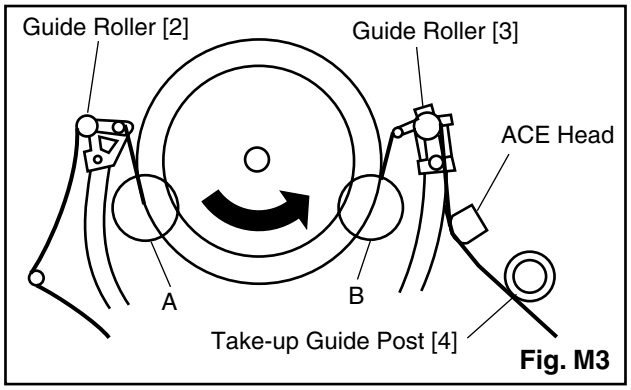


Fig. M3

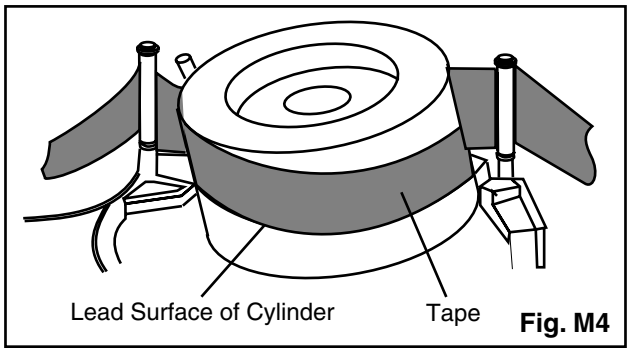


Fig. M4

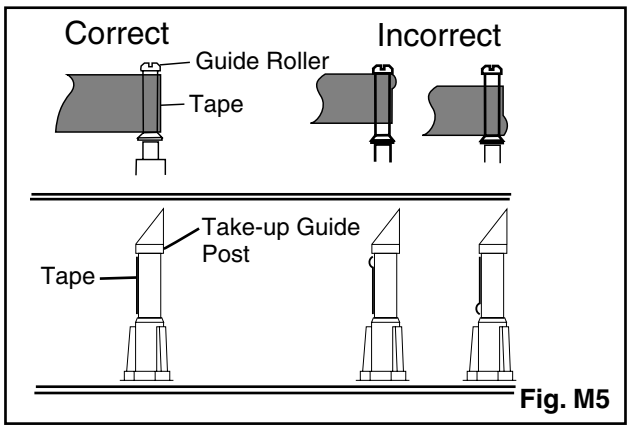


Fig. M5

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

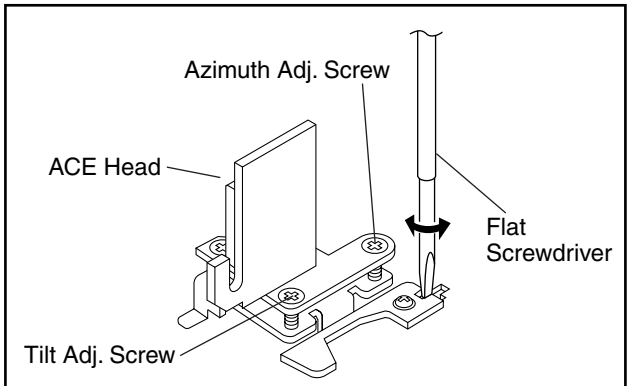


Fig. M6

1-B. X Value Alignment

Purpose:

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

Symptom of Misalignment:

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

1. Connect the oscilloscope to TP008 (C-PB) and TP001 (CTL) on the Main CBA. Use TP002 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL6NS8) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit then “PLAY” button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP008 (C-PB) is maximum. (Fig. M6)

5. To shift the CTL waveform, press CH UP or CH DOWN button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal become within ±2ms from preset position.

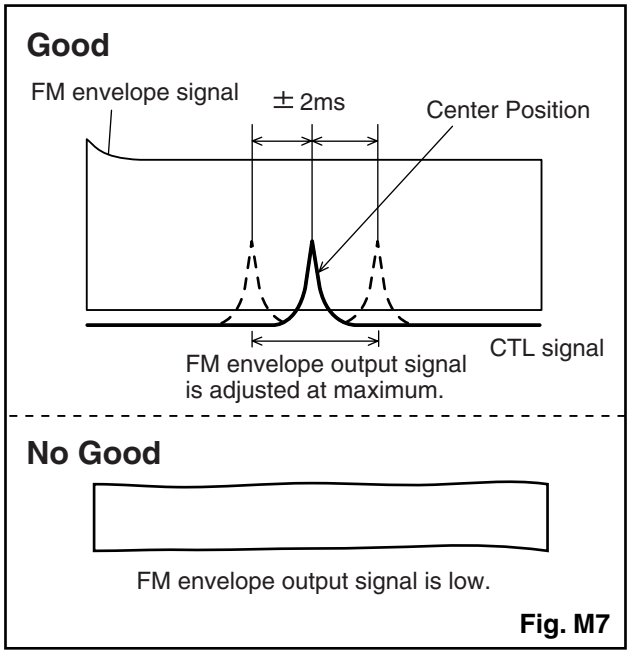


Fig. M7

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

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

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

Symptom of Misalignment:

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

1. Connect the oscilloscope to TP008 (C-PB) on the Main CBA. Use TP002 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL6NS8). Set the Tracking Control Circuit to the preset position by pressing CH UP button and then “PLAY” button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
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.

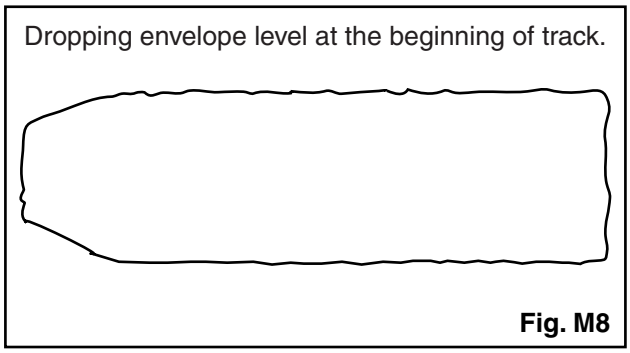


Fig. M8

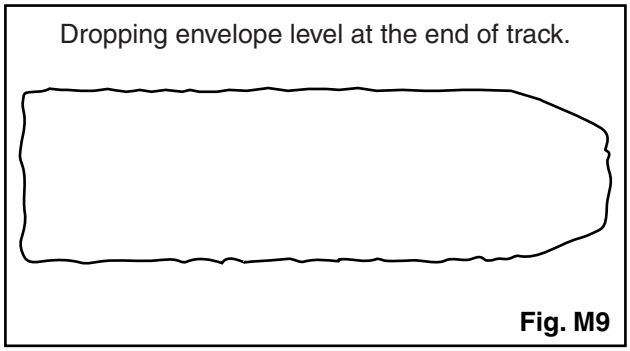


Fig. M9

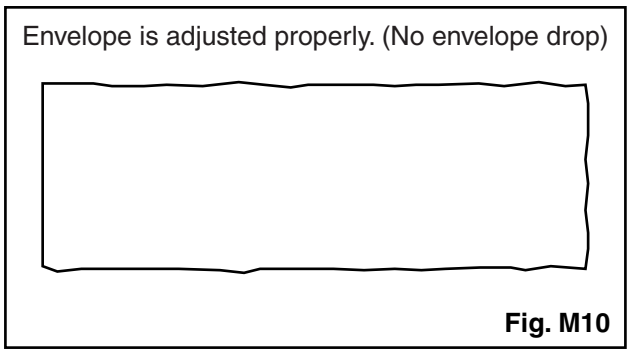


Fig. M10

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

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

Purpose:

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

Symptom of Misalignment:

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

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL6NS8) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Note: Upon completion of the adjustment of Azimuth Adj. Screw, check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the “X Value Alignment.”

1-E. Checking and Alignment of Tape Path during reversing

Purpose:

To make sure that the tape path is well stabilized during reversing.

Symptom of Misalignment:

If the tape path is unstable during reversing, 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. Insert a black cassette tape into the tray and set the unit to REV. Then confirm if the tape has been curled up or bent at the Take-up Guide Post[4] or REV Post[5]. (Refer to Fig. M11 and M12.)
2. When the tape has been curled up or bent, turn the alignment screw to adjust the height of REV Post. (Refer to Fig. M11 and M13.)

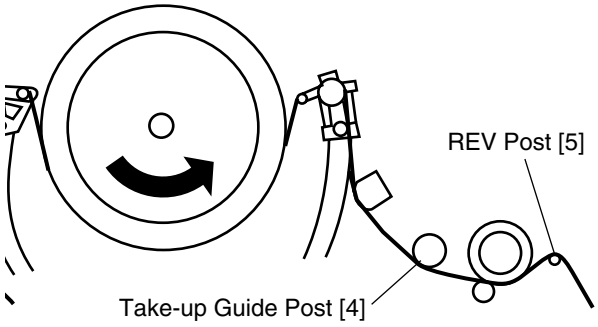


Fig. M11

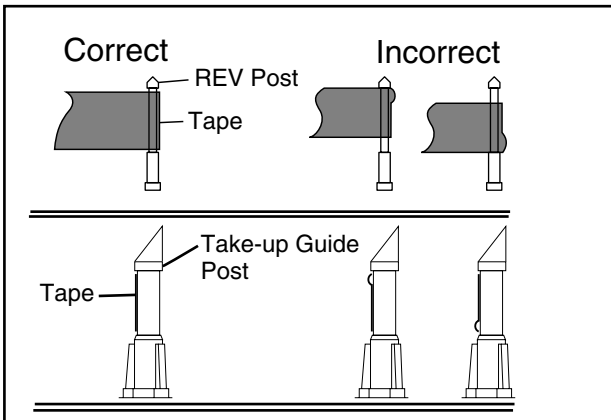


Fig. M12

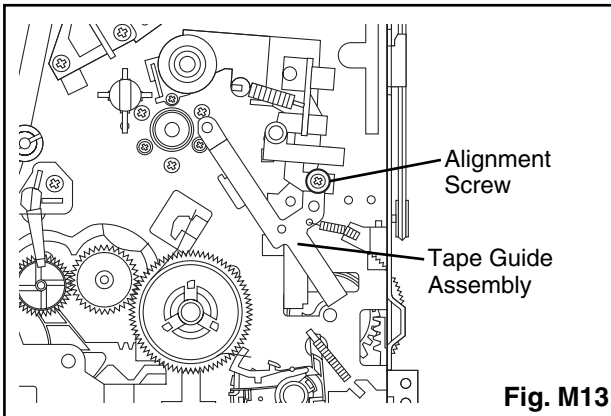


Fig. M13

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-5-1 of Main Section.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig. DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

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

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

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

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

(3): Name of the part

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

(5): Figure Number

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

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

Top View

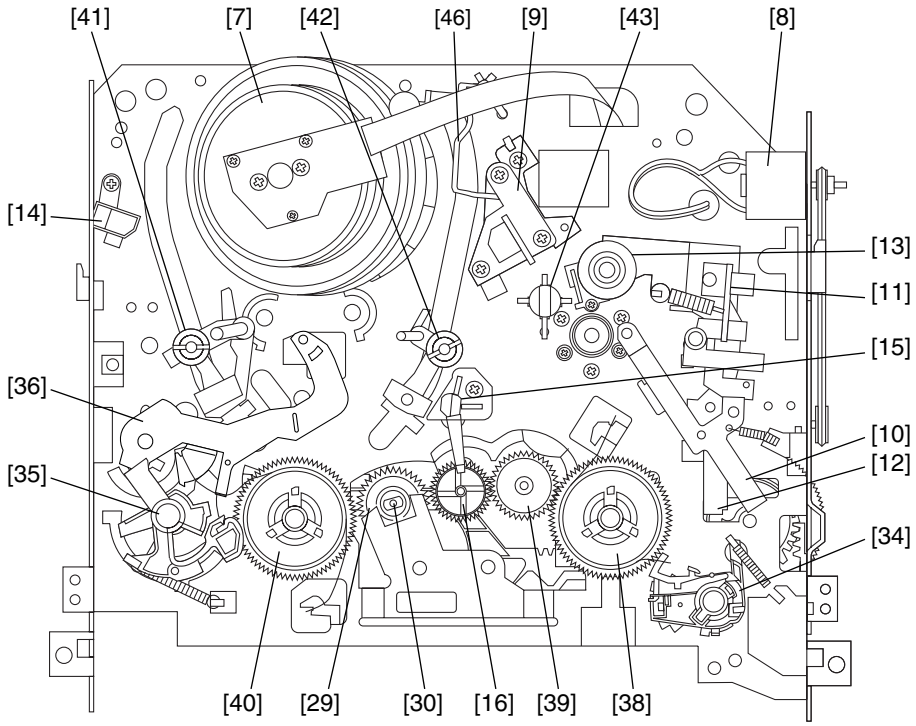


Fig. DM1

Bottom View

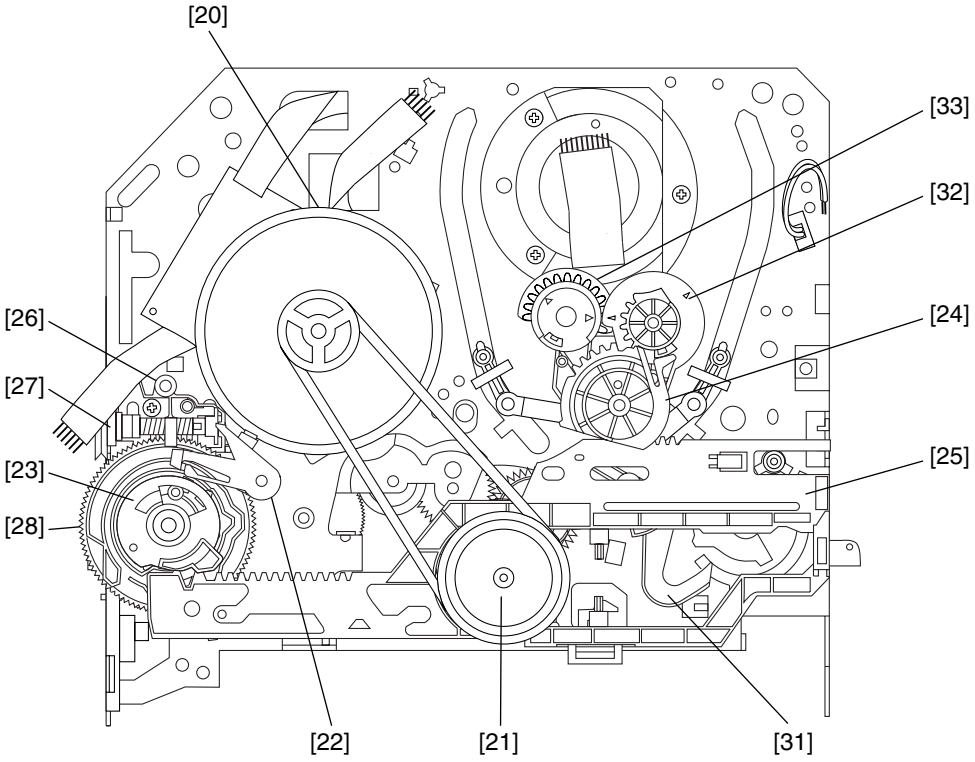


Fig. DM2

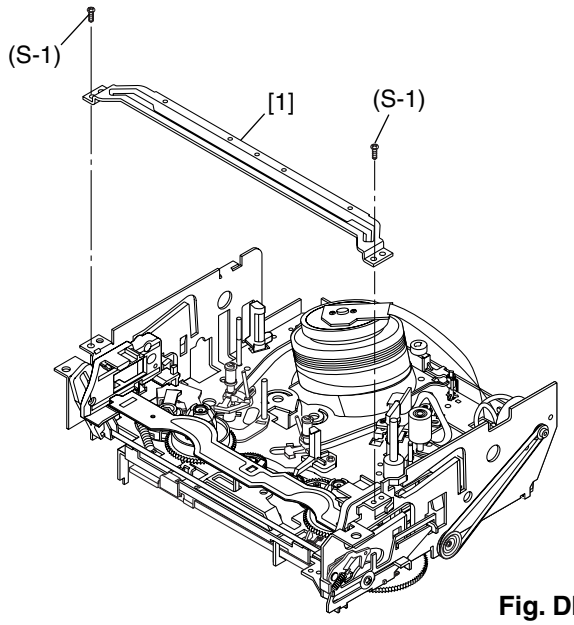
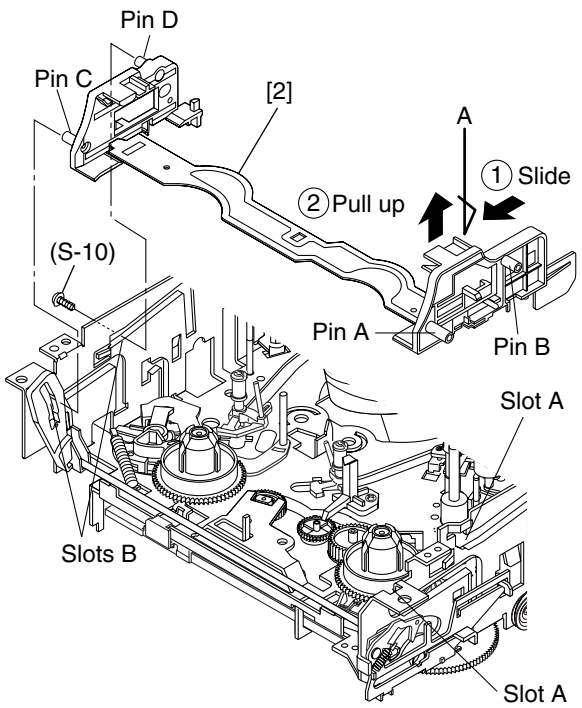


Fig. DM3



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

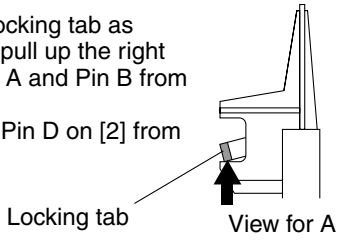
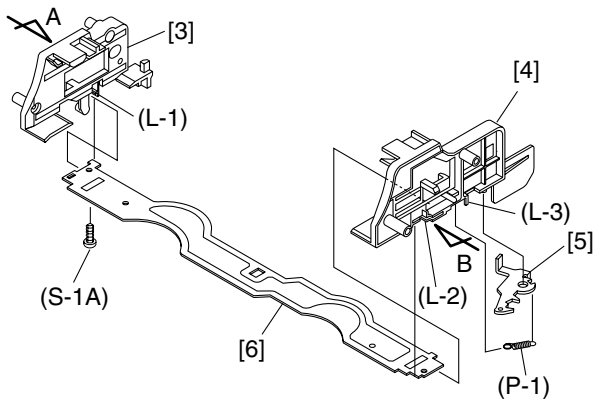
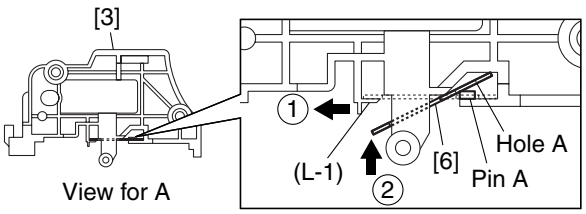


Fig. DM4



Installation of [3] and [6]

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



Installation of [4] and [6]

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

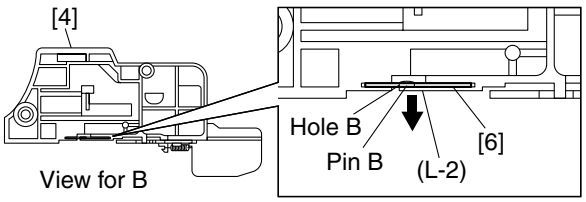


Fig. DM5

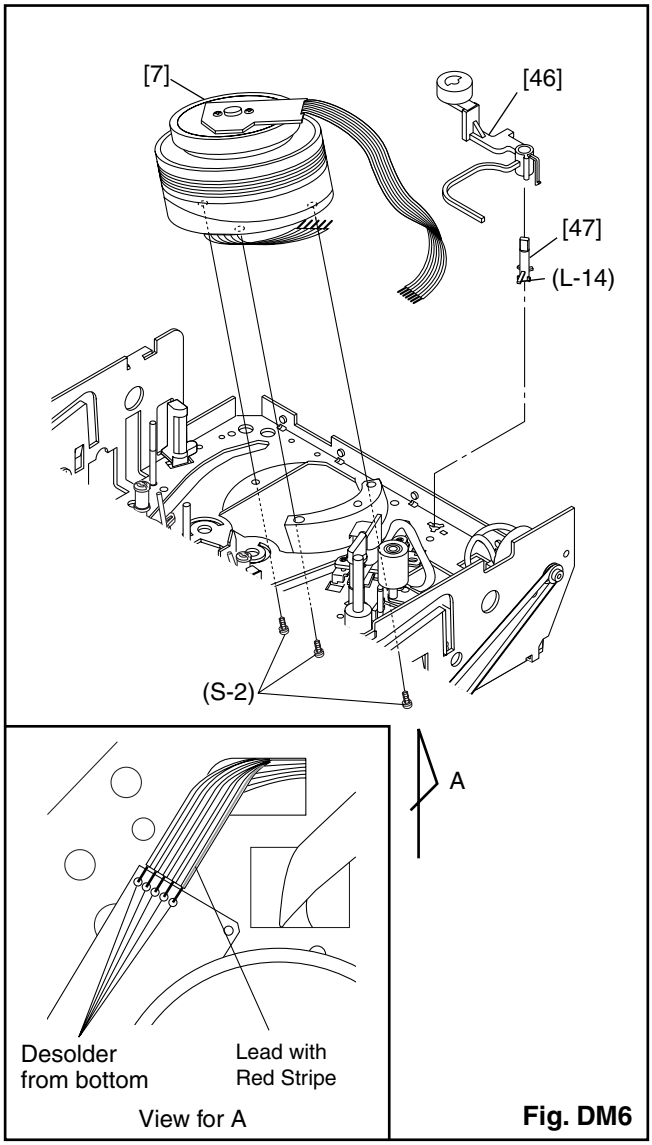


Fig. DM6

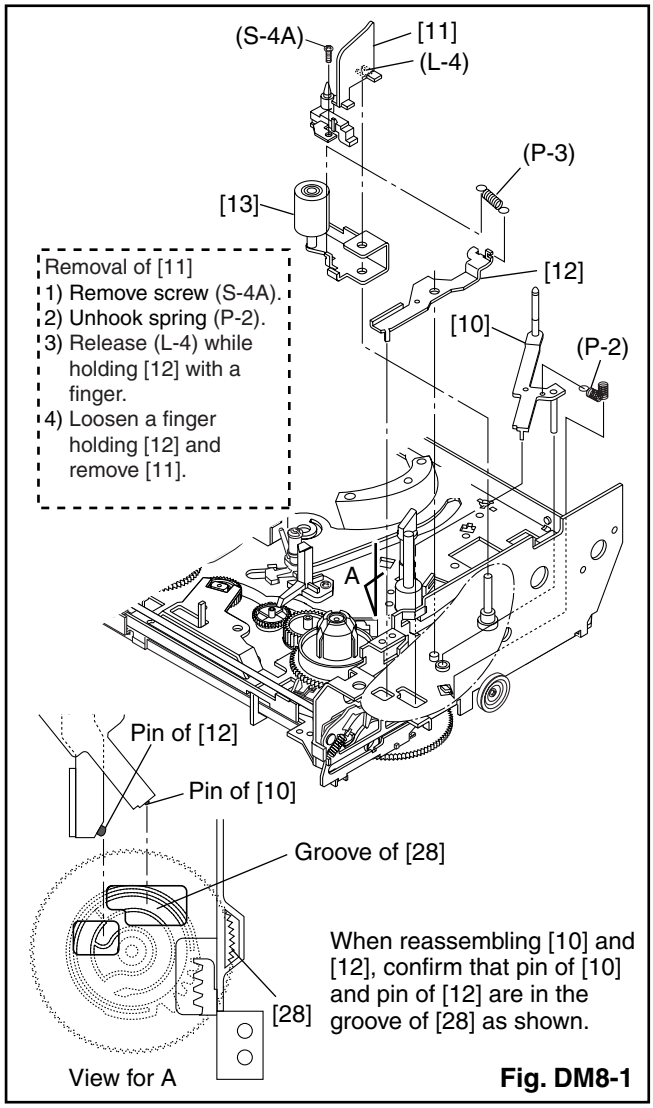


Fig. DM8-1

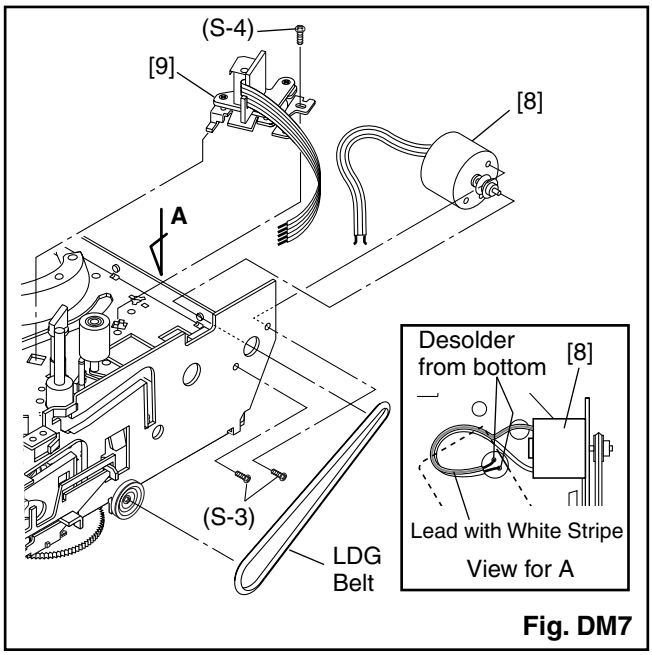


Fig. DM7

Installation of [13] and [12]

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

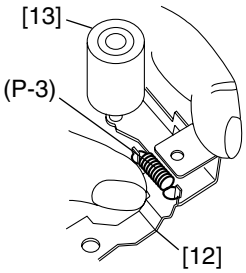


Fig. A

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

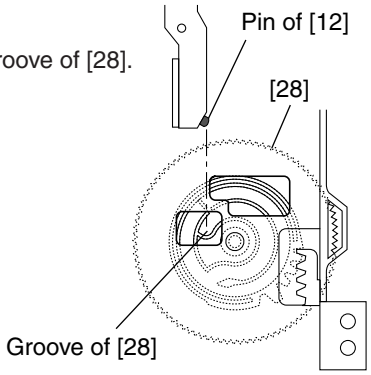


Fig. B (Top view)

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

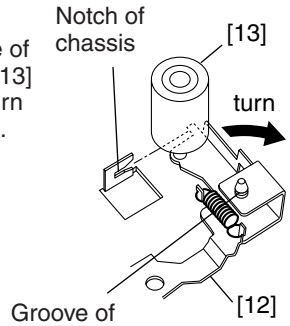


Fig. C

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

Fig. DM8-2

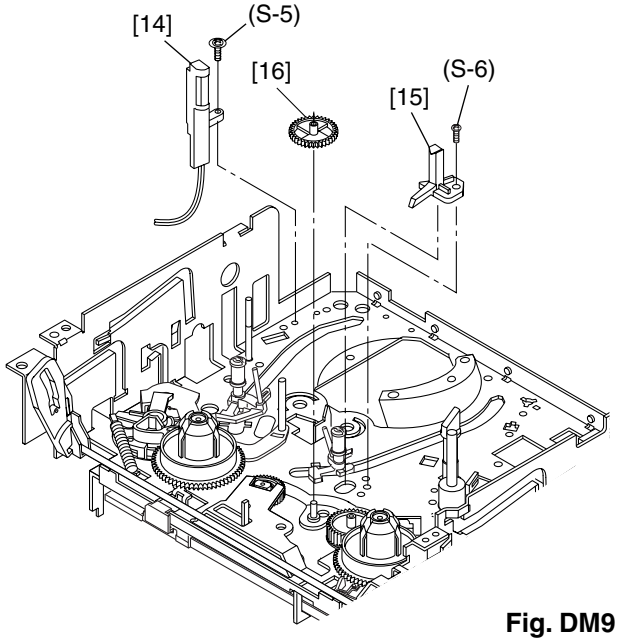


Fig. DM9

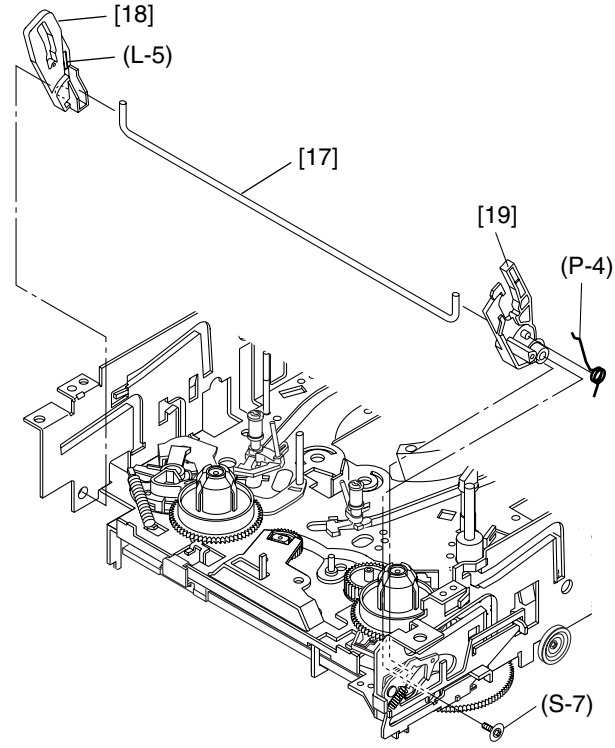
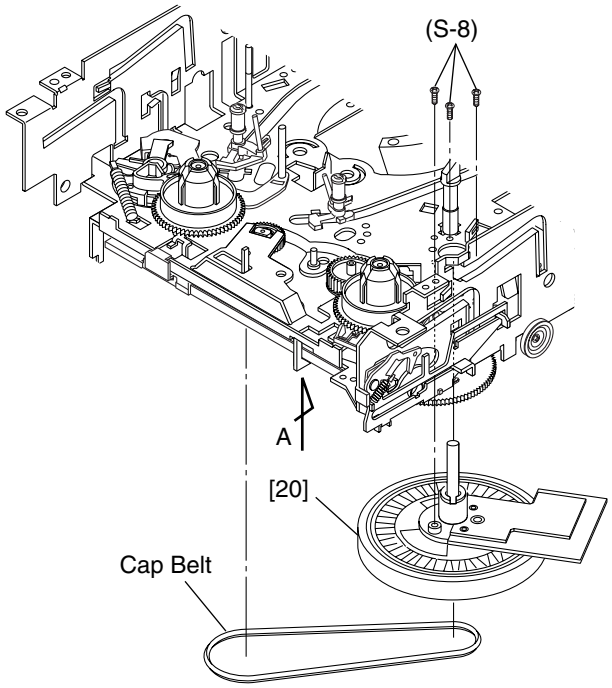
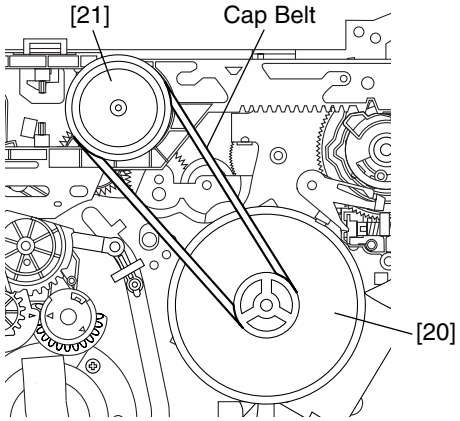


Fig. DM10

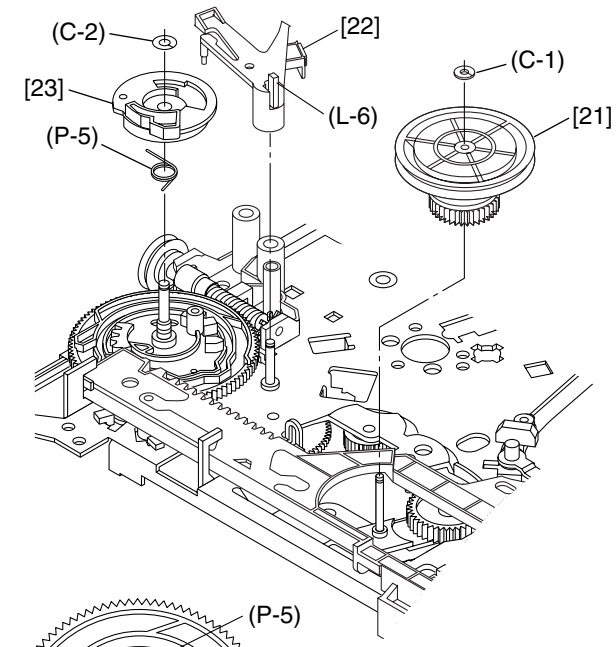


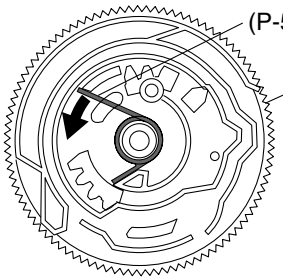
Installation position of Cap Belt



View for A

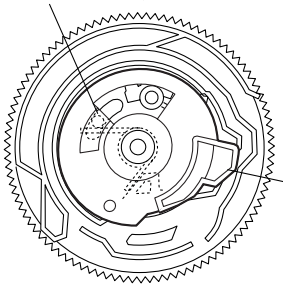
Fig. DM11



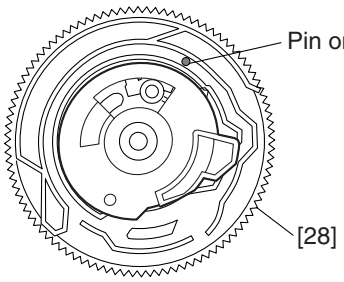


When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.

Pin on bottom of [23]



Top View



Position of pin on [22]

Fig. DM12

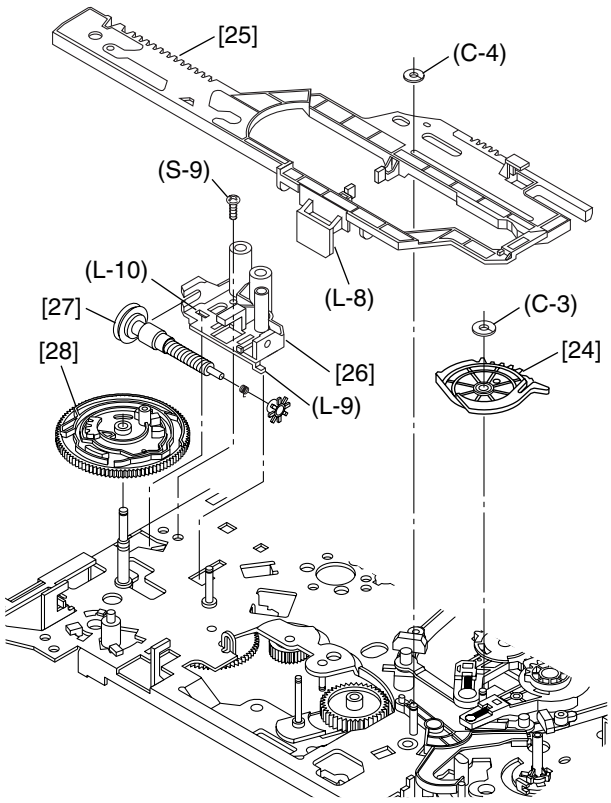


Fig. DM13-1

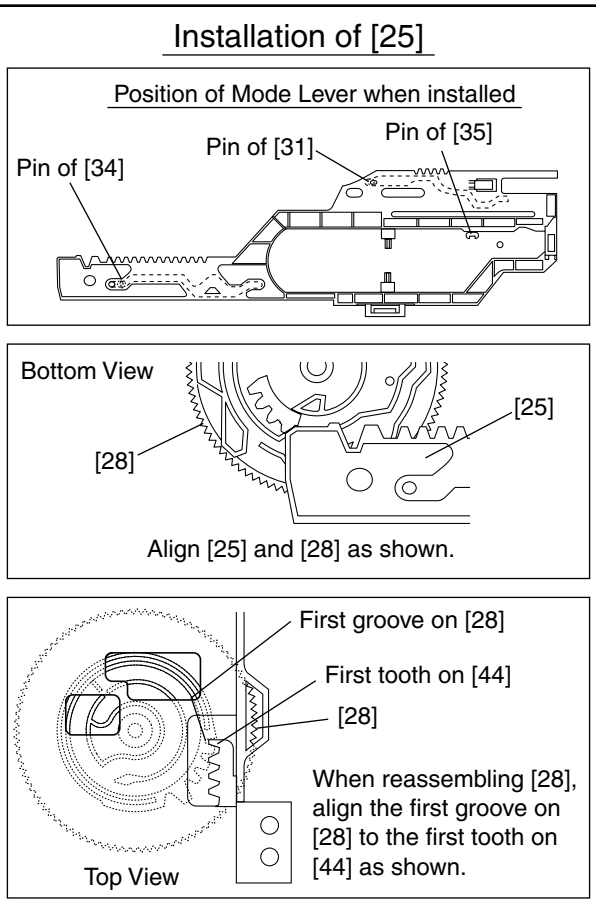


Fig. DM13-2

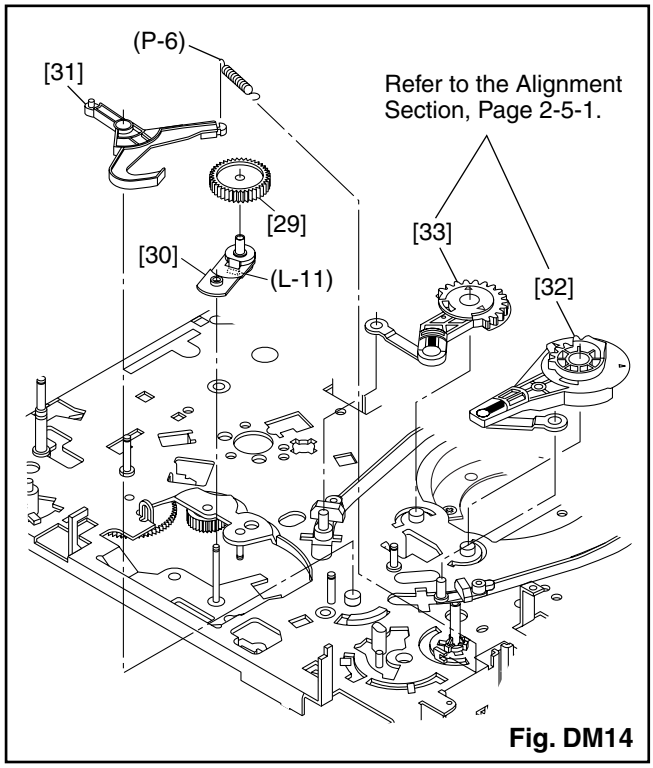


Fig. DM14

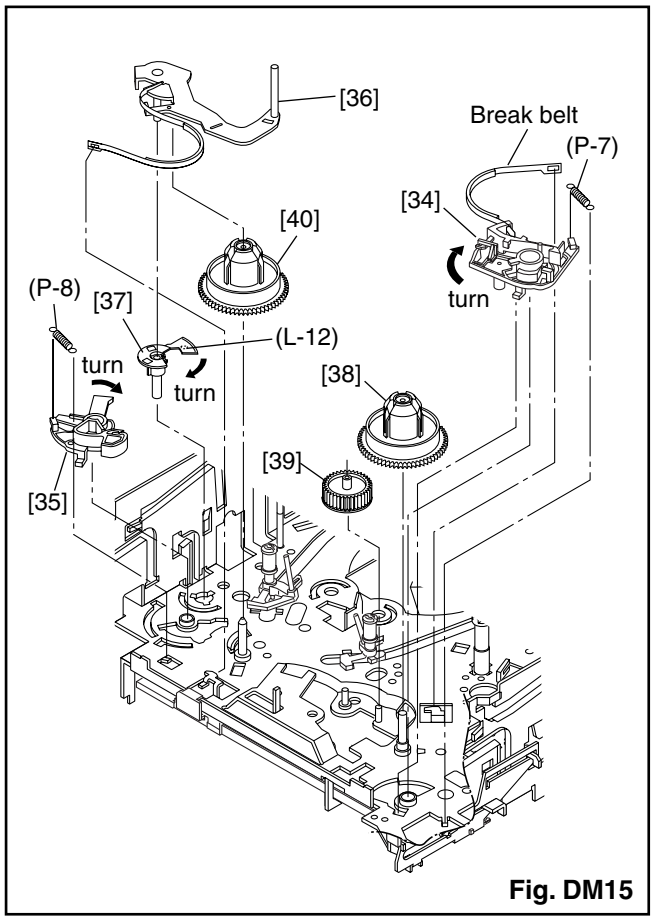


Fig. DM15

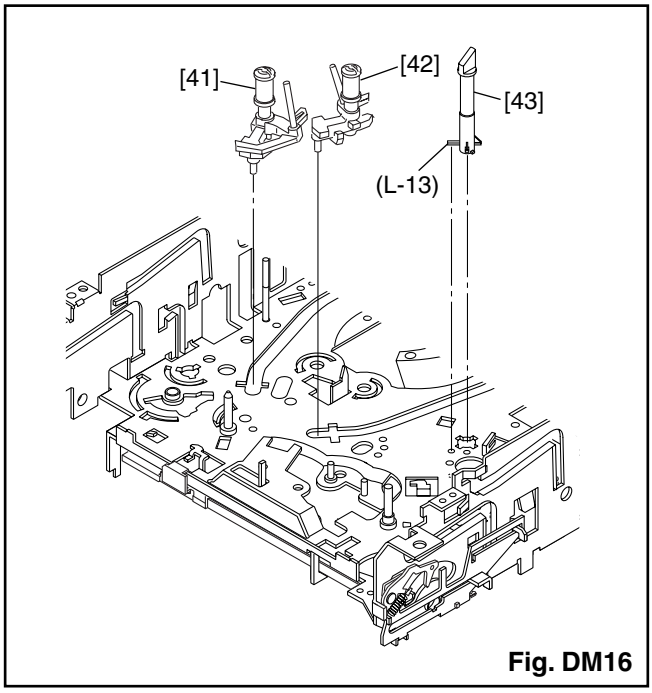


Fig. DM16

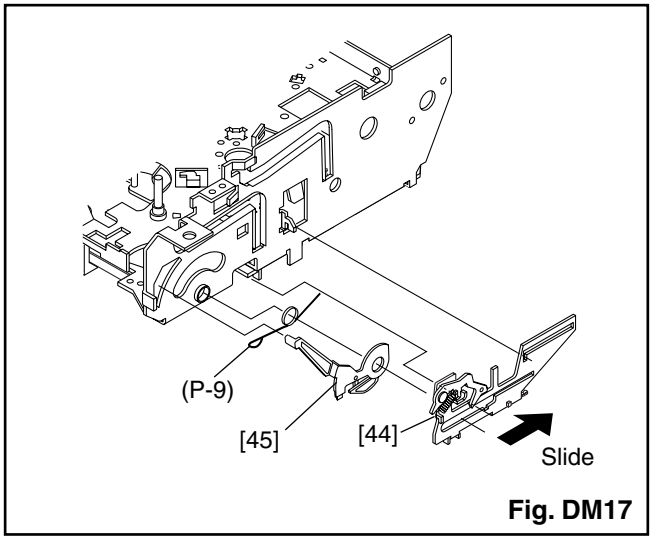


Fig. DM17

ALIGNMENT PROCEDURES OF MECHANISM

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

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

IMPORTANT:

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

Alignment points in Eject Position

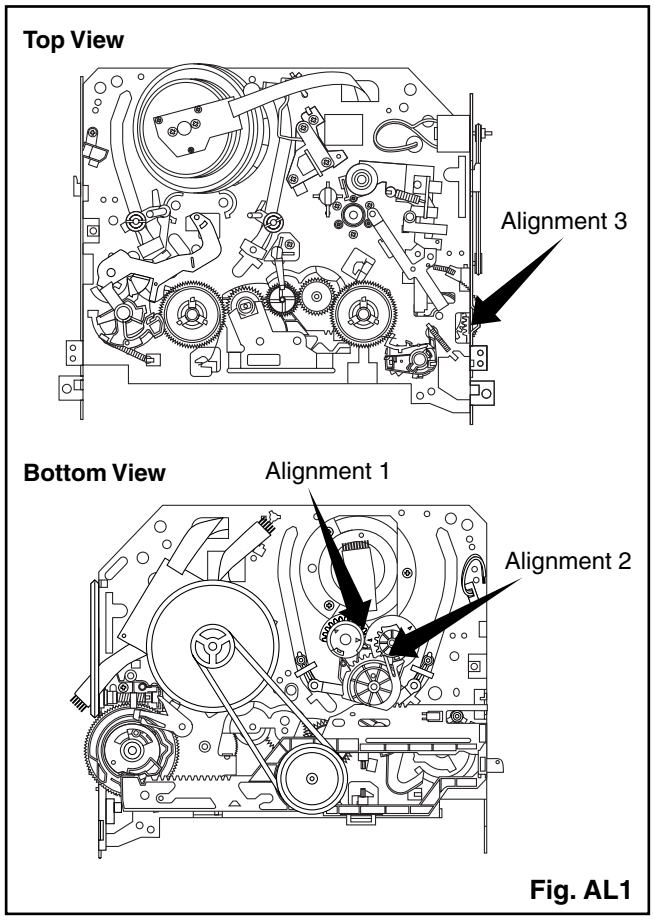


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

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

Alignment 2

Mode Gear

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

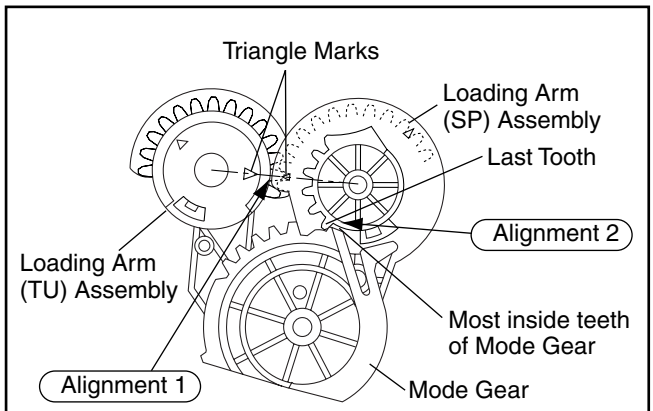


Fig. AL2

Alignment 3

Cam Gear (A), Rack Assembly

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

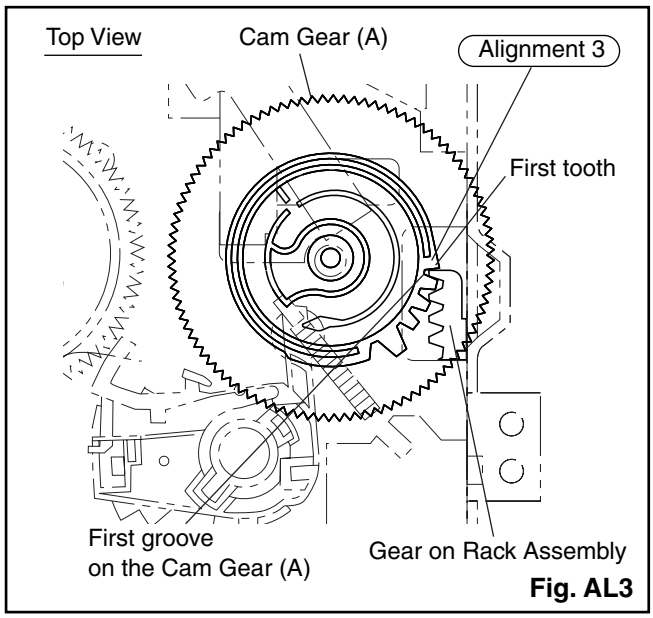
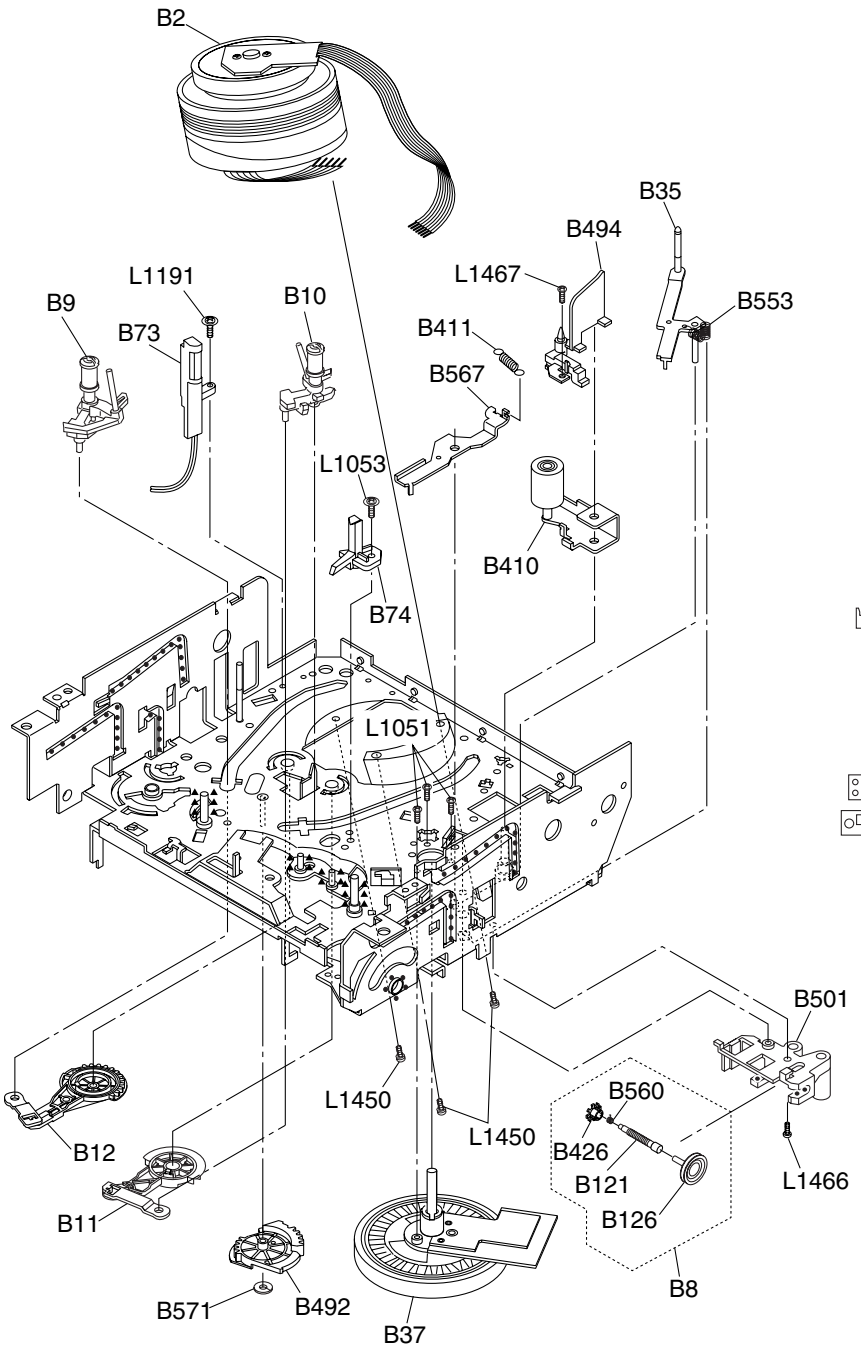


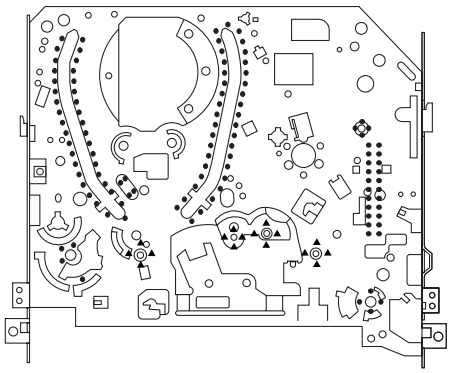
Fig. AL3

DECK EXPLODED VIEWS

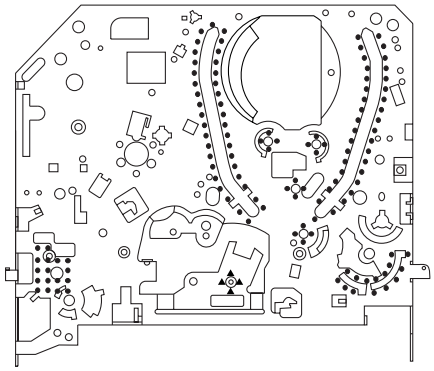
Deck Mechanism View 1

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





Chassis Assembly
Top View (Lubricating Point)

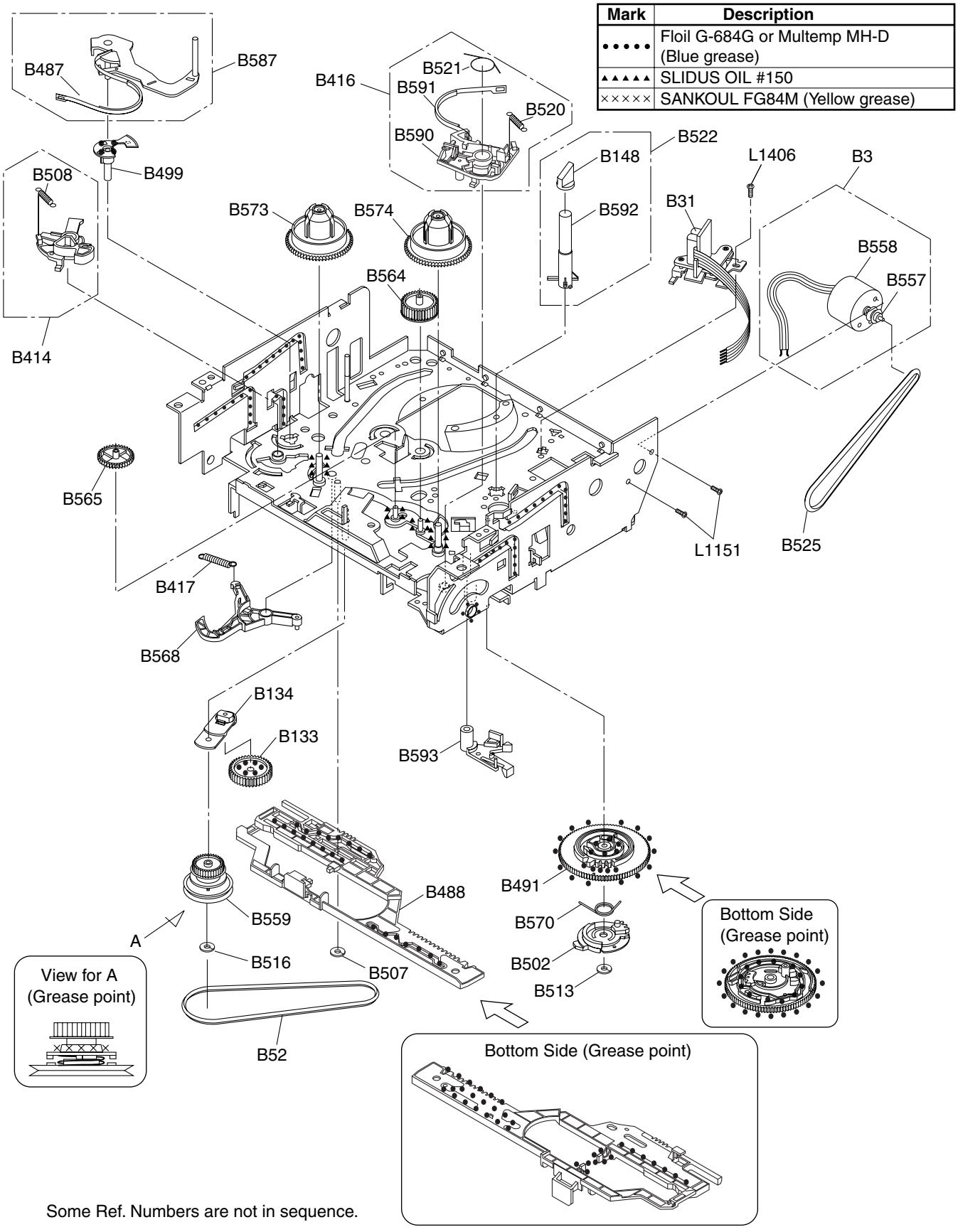


Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

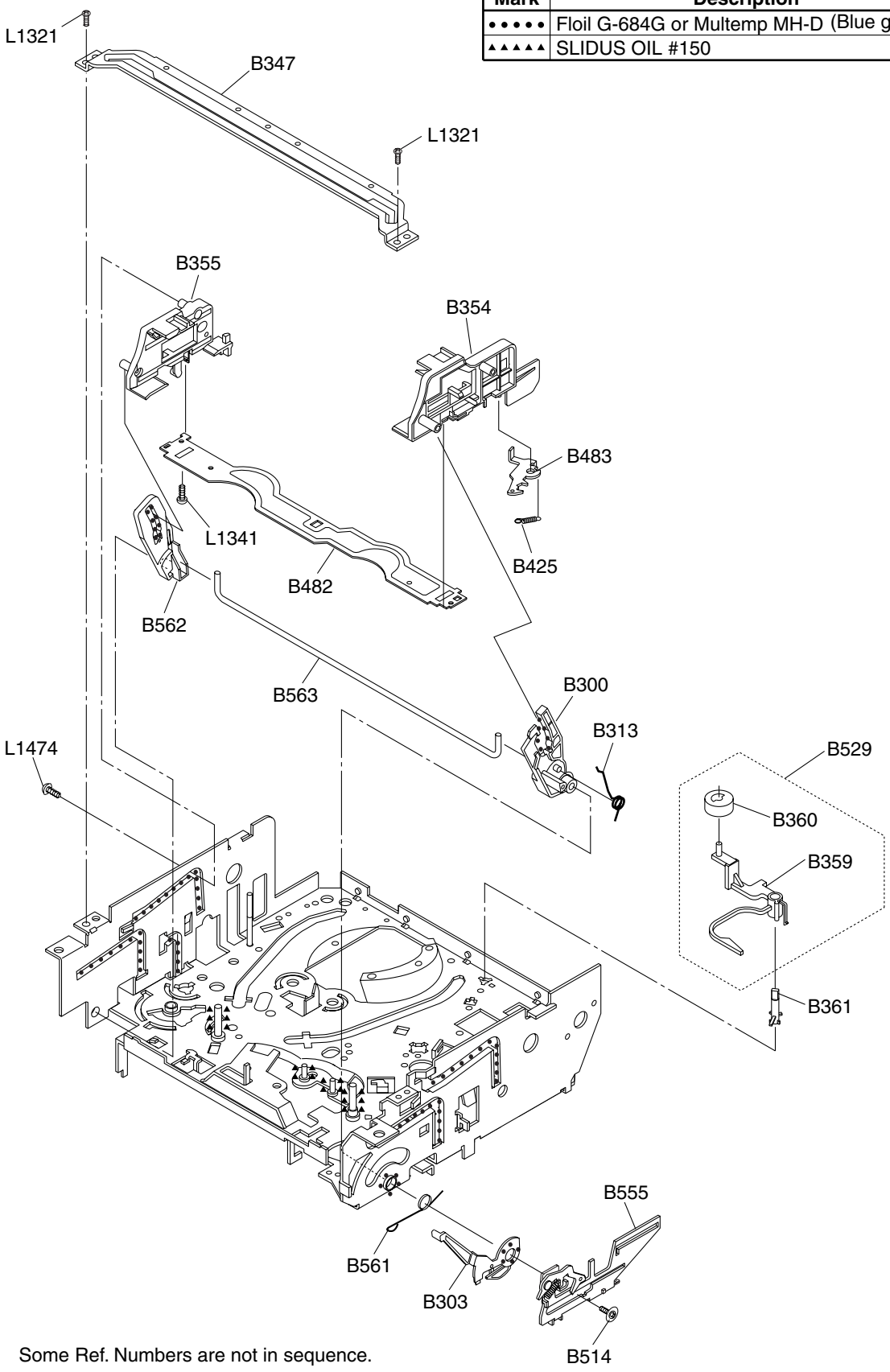
Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150
×××××	SANKOUL FG84M (Yellow grease)



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

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



Some Ref. Numbers are not in sequence.

DECK PARTS LIST

Ref. No.	Description	Part No.
B2	CYLINDER ASSEMBLY MK12.5 PAL 6HD or	N2367CYL
	CYLINDER ASSEMBLY MK12.5 PAL 6HD(V)	N2369CYL
B3	LOADING MOTOR ASSEMBLY MK12.5	0VSA14636
B8	PULLEY ASSEMBLY MK12	0VSA13500
B9	MOVING GUIDE S P.P MK12.5	0VSA14717
B10	MOVING GUIDE T P.P MK12.5	0VSA14639
B11	LOADING ARM(TU) ASSEMBLY MK12	0VSA13300
B12	LOADING ARM(SP) ASSEMBLY MK12	0VSA13299
B31	AC HEAD ASSEMBLY(TVCR) MK12.5	0VSA14866
B35	TAPE GUIDE ARM ASSEMBLY MK12.5	0VSA15014
B37	CAPSTAN MOTOR 288/VCZC1300	N9680CML
B52	CAP BELT MK10	0VM411138
B73	FE HEAD(MK11) MH-131SF11 or	DHVEC01Z0005
	FE HEAD(MK12) VTR-1X2ERS11-155 or	DHVEC01TE005
	FE HEAD(MK12) HVFHP0047A	DHVEC01AL007
B74	PRISM MK10	0VM202870
B121	WORM MK12	0VM414091
B126	PULLEY MK12	0VM414330B
B133	IDLER GEAR MK12	0VM305738
B134	IDLER ARM MK12	0VM305739
B148	TG CAP MK11	0VM412972
B300	C DRIVE LEVER(TU) MK12	0VM203773
B303	F DOOR OPENER MK12	0VM203751C
B313	C DRIVE SPRING MK12	0VM414145
B347	GUIDE HOLDER A MK10	0VM304920
B354	SLIDER(TU) MK12	0VM101172F
B355	SLIDER(SP) MK12	0VM101182K
B359	CLEANER LEVER MK10	0VM304413
B360	CLEANER ROLLER MK9	0VM410032C
B361	CL POST MK10	0VM411114
B410	PINCH ARM(A) ASSEMBLY(6) MK12.5 or	0VSA14935
	PINCH ARM(A) ASSEMBLY(5) MK12	0VSA13788
B411	PINCH SPRING MK12	0VM414644
B414	M BRAKE(SP) ASSEMBLY MK12.5	0VSA14994
B416	M BRAKE(TU) ASSEMBLY MK12	0VSA13283
B417	TENSION SPG(3002645) MK12.5	0VM414221G
B425	LOCK LEVER SPRING MK10	0VM411110
B426	KICK PULLEY MK10	0VM411095
B482	CASSETTE PLATE MK12	0VM203749
B483	LOCK LEVER MK12	0VM414095
B487	BAND BRAKE(SP) MK12	0VM305723
B488	MODE LEVER MK12.5	0VM101351
B491	CAM GEAR(A) MK12	0VM101174
B492	MODE GEAR MK12	0VM203769
B494	C DOOR OPENER MK12	0VM305719
B499	T LEVER HOLDER MK12	0VM305729
B501	WORM HOLDER MK12	0VM203767
B502	CAM GEAR(B) MK12	0VM305721
B507	REEL WASHER MK9 5*2.1*0.5	0VM410058
B508	S BRAKE SPRING MK10	0VM411121
B513	CAM WASHER MK12	0VM414741
B514	SCREW RACK MK10	0VM411535
B516	REEL WASHER MK9 5*2.1*0.5	0VM410058
B520	TU BRAKE SPRING MK12	0VM414285
B521	REV BRAKE SPRING MK12	0VM414222
B522	TG POST ASSEMBLY MK11	0VSA12080

Ref. No.	Description	Part No.
B525	LDG BELT MK11	0VM412804
B529	CLEANER ASSEMBLY MK10	0VSA11161
B553	REV SPRING MK11	0VM412555
B555	RACK ASSEMBLY MK12	0VSA13289
B557	MOTER PULLEY U5	0VM403205
B558	LOADING MOTOR M31E-1 R-14 7401 or	MMDZB12MM007
	LOADING MOTOR M31E-1 R-14 7402	MMDZB12MM008
B559	CLUTCH ASSEMBLY MK12 or	0VSA13284
	CLUTCH ASSEMBLY(64) MK12	0VSA14459
B560	KICK SPRING MK10	0VM411475A
B561	F DOOR SPRING MK10	0VM411430
B562	C DRIVE LEVER(SP) MK12	0VM203772
B563	SLIDER SHAFT MK12	0VM305762
B564	M GEAR MK12	0VM305735
B565	SENSOR GEAR MK12	0VM305736
B567	PINCH ARM(B) MK12	0VM305718
B568	BT ARM MK12	0VM305728
B570	CAM RACK SPRING(HI) MK11	0VM412923
B571	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573	REEL(SP)(D2) MK12	0VM203755
B574	REEL(TU)(D2) MK12	0VM203756
B587	TENSION LEVER ASSEMBLY MK12	0VSA13279
B590	BRAKE ARM(TU) MK12	0VM203752E
B591	BAND BRAKE(TU) MK12	0VM305724C
B592	TG POST MK11	0VM412550
B593	CAM HOLDER ASSEMBLY MK12.5	0VSA14634
L1051	SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151	SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1341	SCREW, P-TIGHT M2X6 PAN HEAD+	GPMP2060
L1406	AC HEAD SCREW MK9	0VM410964
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1466	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467	SCREW M2.6X5 WASHER HEAD+	SCM39050
L1474	SCREW, P-TIGHT M2.6X12 WASHER HEAD+	GCMP9120

TVD-A2104PT/TVD-B2104PT/TVD-C2104PT/TVD-D2104PT
T6100EA(T6104LE)/T6101BB/T6102FC/T6103RD
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