

TOSHIBA

FILE NO. 810-200896GR

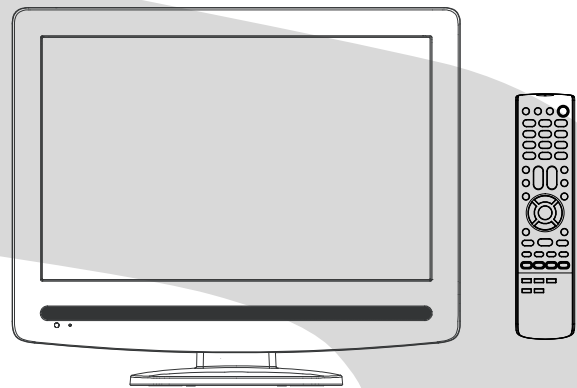
SERVICE MANUAL



19-inch Diagonal LCD TV/DVD COMBINATION

19DV550P

19DV551P



The above models are classified as green products (*1), as indicated by the underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

(*1)

GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2)

LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

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EU Conformity Statement



"This product is marked with "CE" and complies therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC."

Responsible for CE-marking is TOSHIBA INFORMATION SYSTEMS (U.K.) LTD, Toshiba Court, Weybridge Business Park, Addlestone Road, Weybridge, Surrey, KT15 2UL, United Kingdom

Following information is only for EU-member states:

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Following information is only valid for EU-member States:

Disposal of batteries and/or accumulators

The crossed out wheeled dust bin symbol indicates that batteries and/or accumulators must be collected and disposed of separately from household waste.

If the battery or accumulator contains more than the specified values of lead (Pb), mercury (Hg), and/or cadmium (Cd) defined in the Battery Directive (2006/66/EC), then the chemical symbols for lead (Pb), mercury (Hg) and/or cadmium (Cd) will appear below the crossed out wheeled bin symbol.

By participating in separate collection of batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health.

For more detailed information about the collection and recycling programmes available in your country, please contact your local city office or the shop where you purchased the product.



J51K0201A SH 08/10

TOSHIBA



19-inch Diagonal LCD TV/DVD COMBINATION

19DV550P
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OWNER'S MANUAL



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Before operating the unit, please read this manual thoroughly.
*Screen size is approximate.

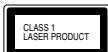
Owner's Record
The model number and serial number are on the back of your TV/DVD. Record these numbers in the spaces below. Refer to these numbers whenever you communicate with your Toshiba dealer about this TV/DVD.

Model number: _____
Serial number: _____

Precautions

CAUTION:
THIS UNIT IS A CLASS 1 LASER PRODUCT. HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE PLAYER CORRECTLY AS INSTRUCTED.

THE FOLLOWING CAUTION LABEL IS LOCATED ON THE REAR PANEL OF THE UNIT.



WHEN THIS UNIT IS PLUGGED INTO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

Headphone Warning

Loud music can damage your hearing irreversibly, therefore do not set the volume to a high level when listening through headphones, particularly for extended listening periods.

* The "HD ready" Logo is a trademark of EICTA.

Possible Adverse Effects on LCD Screen: If a fixed (non-moving) pattern remains on the LCD screen for long periods of time, the image can become permanently engrained in the LCD TV panel and cause subtle but permanent ghost images. This type of damage is NOT COVERED BY YOUR WARRANTY. Never leave your TV on for long periods of time while it is displaying the following formats or images:

- Fixed Images, such as stock tickers, video game patterns, TV station logos, and websites.
- Special Formats that do not use the entire screen. For example, viewing letterbox style (16:9) media on a normal (4:3) display (Black bars at top and bottom of screen); or viewing normal style (4:3) media on a widescreen (16:9) display (Black bars on left and right sides of screen).

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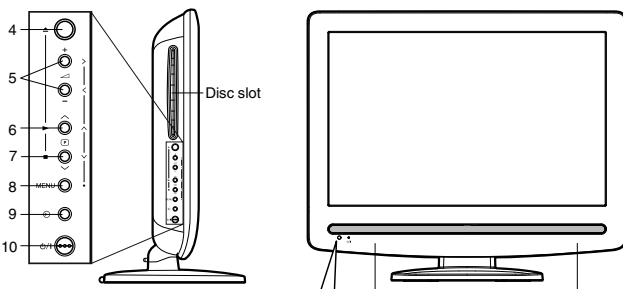
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Important safety information

- This unit has been produced according to all current safety regulations. The following safety tips should safeguard users against careless use and the dangers connected with such use.
- Although this appliance has been carefully manufactured and rigorously checked prior to leaving the factory, as with all electrical appliances it is possible for problems to develop. If you notice smoke, an excessive build-up of heat or any other unexpected phenomena, you should disconnect the plug from the mains power socket immediately.
 - Ensure that the unit is sufficiently ventilated! Never place next to or underneath curtains!
 - This set should be only be connected to an AC 220-240V / 50Hz mains power supply - do not attempt to connect it to any other type of supply.
 - The apparatus must be connected to a main socket outlet with a protective earthing connection.
 - The socket-outlet must be installed near the equipment and easily accessible.
 - Any repairs must be carried out by qualified service personnel only.
 - Do not open this unit. A non-expert attempting to repair the unit could be dangerous and potentially cause a fire hazard.
 - Keep away from rodents. Rodents (and also cockatiels) enjoy biting into electric flexes.
 - The animal can cause a short out (fire hazard!) and receive a fatal electric shock.
 - Always hold plug when pulling out plug from power mains supply system. Do not pull on flex. The flex can become overloaded and cause a short cut.
 - Never wet clean. Only use a damp cloth, the same as when cleaning furniture.
 - Set up unit so that no one is able to trip over the flex.
 - Only use the unit on a stable, shock-free base in order to avoid any danger from falling.
 - Take note that toddlers can pull the unit down from the table or cupboard by means of its flex. Children can hurt themselves when doing this.
 - Do not use the unit near heat sources. The casing and flex could be damaged by the impact of heat.
 - The screen is made of glass and can break if damage is done to it. Be careful when collecting sharp-edged glass splitters.
 - You could be hurt or the unit could be damaged.
 - If the unit is mounted on the wall, contact the shop where you purchased the unit for advice, and leave the installation work to experts. Incomplete installation work can cause you injuries.
 - When installing the set on a wall, allow at least 10 cm clearance between the rear of the set and the wall. Clearance of less than 10 cm will obstruct the vents and cause the interior of the set to overheat, resulting in faults or damage to the set.
 - Taking fall-prevention measures
 - If these measures are not taken, the unit can fall and you could be injured.
 - Contact the shop where you purchased the unit to obtain full details of the measures.
 - When a TV stand is used,
 - Ensure the unit is fully on the stand and placed in the centre.
 - Do not leave the stand doors open.
 - You could be hurt as a result of the unit falling or breaking, or your fingers being caught or jammed. Take extra precautions if you have children.
 - Avoid placing the unit on any surfaces that may be subject to vibrations or shocks.
 - To protect the unit during a thunder storm unplug the AC power cord and disconnect the aerial. Caution: Do not touch the aerial connector.
 - When you leave your home for a long period of time, unplug the AC power cord for safety reasons.
 - The unit becomes warm when in operation. Do not place any covers or blankets on the unit in order to prevent overheating. The ventilation holes are not to be blocked. Do not set up near radiators. Do not place in direct sunshine. When placing on a shelf leave 10 cm free space around the whole unit.
 - Make some space around TV (Correct shelf assembly).
 - The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
 - Liquids spilled into the unit can cause serious damage. Switch the set OFF and disconnect the mains power supply, then consult a qualified service person before attempting to use the unit again.
 - Moisture condensation occurs, for example, when you pour a cold drink into a glass on a warm day. Drops of water form on the outside of the glass. In the same way, moisture may condense on the optical pick-up lens inside this unit, one of the most crucial internal parts of the unit.
 - Moisture condensation occurs during the following cases.
 - When you bring the unit directly from a cold place to a warm place.
 - When you use the unit in a room where you just turned on the heater, or a place where the cold wind from the air conditioner directly hits the unit.
 - In summer, when you use the unit in a hot and humid place just after you move the unit from an air conditioned room.
 - When you use the unit in a humid place.
 - Do not use the unit when moisture condensation may occur.
 - If you use the unit in such a situation, it may damage discs and internal parts. Remove the disc, connect the mains lead of the unit to the mains power outlet, turn on the unit, and leave it for two or three hours.
 - After two or three hours, the unit will have warmed up and evaporated any moisture. Keep the unit connected to the mains power outlet and moisture condensation will seldom occur.

4

Location of controls



Adjusting the angle of the base

You can adjust the angle of the TV-screen for 3° forward or for 10° backward from vertical angle. Hold the base of the TV while adjusting the angle.

Description of Indicators and Controls

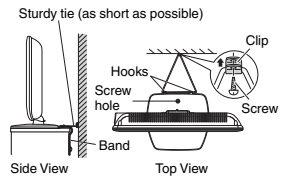
1. Remote sensor
2. **(Power) indicator:** The LED indicator lights up red in standby mode, and green in the power ON mode.
3. Loudspeakers
4. **(EJECT):** Eject a disc.
5. **(Volume) +/- buttons / In Menu: Setting.**
6. **(Channel) /PLAY (▶) button:** Press **▲** to change to a higher numbered channel set into memory. DVD mode : Playback. In Menu: Setting. In Standby: Turning on the unit.
7. **(Channel) /STOP (■) button:** Press **▼** to change to a lower numbered channel set into memory. DVD mode : Stop. In Menu: Setting. In Standby: Turning on the unit.
8. **MENU button:** To display the menu screen.
9. **(INPUT SELECT) button:** Select input mode for TV/AV1/AV2/COMPONENT/HDMI/PC/DVD. In Menu : Using as **ENTER** button.
10. **(Power)-button:** Preparation: Connect power-cable to 230V/50Hz.
 - a) If standby-LED is red, you may power-off. To power-off, press power-button 1x and release. For confirmation, standby-LED will turn off.
 - b) If standby-LED is off, you may power-on. To power-on, press power-button 1x and release. For confirmation, standby-LED will change to red and about 1 second later to green.
 - c) If the TV is currently working, press power-button 1x and release to power-off. For confirmation, standby-LED will turn off. In power-off-condition, the unit cannot be power-on by pressing **(On)** on the remote control. In power-off-condition, the TV's power-consumption is approx. 1 Watt. If total disconnection from the mains is required, please unplug.

6

Important safety information

Where to install

Locate the television away from direct sunlight and strong lights, soft, indirect lighting is recommended for comfortable viewing. Use curtains or blinds to prevent direct sunlight falling on the screen.



Place on a sturdy platform, the mounting surface should be flat and steady. It should then be secured to the wall with a sturdy tie using the clip on the back of the stand, or secured to the platform using the fixing strap located underneath the table top stand, this will prevent it from falling over.

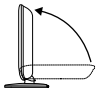
The LCD display panels are manufactured using an extremely high level of precision technology, however sometimes some parts of the screen may be missing picture elements or have luminous spots. This is not a sign of a malfunction.

Make sure the television is located in a position where it cannot be pushed or hit by objects, as pressure will break or damage the screen, and that small items cannot be inserted into slots or openings in the case.

Retractable pedestal stand and locating the LCD TV

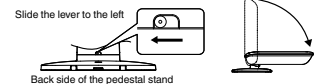
Observe the following safety precautions:

- 1) Ensure that unpacking and transfer of the unit is carried out by two or more people.
- 2) Put the LCD TV on a large level area in a recumbent posture.
- 3) Grab the pedestal stand and lift the display up. Confirm the pivot is locked.
- 4) Place the TV on a sturdy, level surface that can support the weight of the TV.
- 5) Be sure to secure the TV to a wall stud, pillar, surface, or other immovable structure. To secure the TV in this manner: (1) attach a clip to an immovable structure, then (2) pass a sturdy strap through the clip and attach each end to the hooks located at the back of the TV. Be sure to leave at least 10 cm between the TV and the wall or similar structure for ventilation.



To fold the pedestal stand

- 1) Slide the lever on the back side of the pedestal stand to the left.
- 2) Lay the display down.



NOTE: Do not operate the LCD TV when the pedestal stand is folded. The pedestal stand should not be folded at any time except for packing purposes.

Please take note

EXCLUSION CLAUSE

Toshiba shall under no circumstances be liable for loss and/or damage to the product caused by:

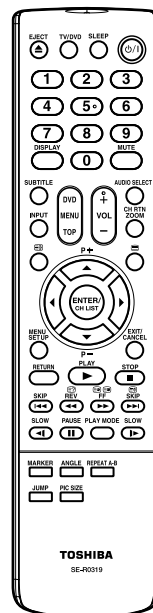
- i) fire;
- ii) earthquake;
- iii) accidental damage;
- iv) intentional misuse of the product;
- v) use of the product in improper conditions;
- vi) loss and/or damage caused to the product whilst in the possession of a third party;
- vii) any damage or loss caused as a result of the owner's failure and/or neglect to follow the instructions set out in the owner's manual;
- viii) any loss or damage caused directly as a result of misuse or malfunction of the product when used simultaneously with associated equipment;

Furthermore, under no circumstances shall Toshiba be liable for any consequential loss and/or damage including but not limited to the following, loss of profit, interruption of business, the loss of recorded data whether caused during normal operation or misuse of the product.

If stationary images generated by text services, channel identification logos, computer displays, video games, on screen menus, etc. are left on the television screen for any length of time they could become conspicuous, it is always advisable to reduce both the brightness and contrast settings.

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Remote Control



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7

Remote Control

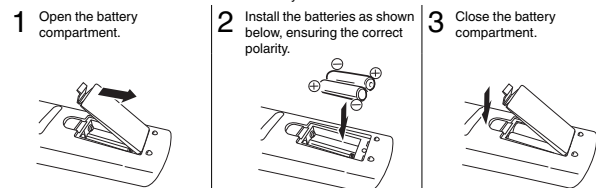
Install the batteries

Use batteries type UM4/R03 (AAA-Size).

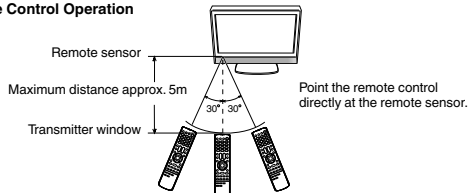
Do not use old or weak batteries. The remote control may not work properly with a weak voltage from such batteries. Replace exhausted batteries with new ones. Never try to recharge normal batteries - this could cause an explosion.

Note:

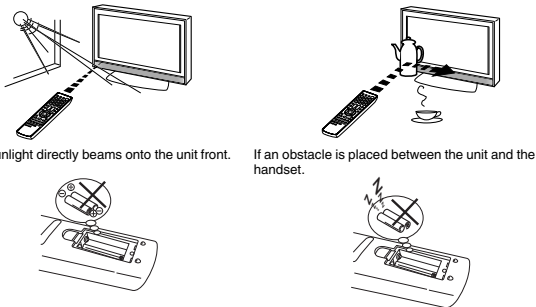
Exhausted batteries can leak corrosive electrolyte, which may cause damage to the remote control - therefore remove exhausted batteries immediately.



Distance of Remote Control Operation



The remote control handset will not work properly in the following cases:



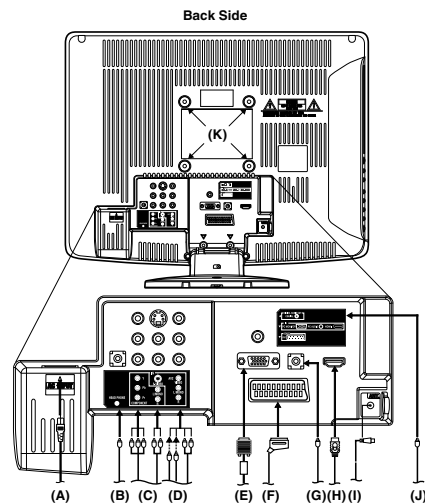
If bright sunlight directly beams onto the unit front. If an obstacle is placed between the unit and the handset. If the batteries have not been installed according to their polarities. If the batteries are weak.

Aerial connection

Note: Before you connect other appliances:

- To avoid potentially damaging your set, make sure all items are switched off and disconnected from the mains power when you make the connections.
- Arrange the desired connection.
- When you have finished making the connections, reconnect the mains power to the unit and switch it back on.

Connect your aerial as shown below. Connections to other equipment is explained further on pages 43-45. If you have problems with reception, consult a specialist of aerial.



- (A) **Power supply:** Connect the supplied power cable to an AC 220-240V/50Hz mains power supply only - do not attempt to connect it to any other type of supply. Never try to repair a damaged AC power cord with isolation-tape - this should be repaired by a specialist or replaced. Do not let your pet loose near the cable. Animals biting into the cable could receive a fatal electric shock, and could cause a hazard to others.
- (B) **HEADPHONE jack:** Plug headphones with a mini plug (3.5 mm) into this jack.
- (C) **COMPONENT input:** See page 45.
- (D) **AV2 input:** Input for analogue A/V-Signal (Composite or S-Video). See page 45.
- (E) **PC MONITOR input (PC):** See page 41.
- (F) **Scart socket (AV1):** For the connection of scart cable. See pages 43-45.
- (G) **PC AUDIO input:** See pages 41, 42.
- (H) **HDMI input:** See page 42.
- (I) **Aerial input socket:** Connect the outdoor aerial to the aerial input socket as shown.
- (J) **Digital audio output:** Digital output for CD/DVD (see page 44).
- (K) **Bracket holes:** Fix a wall mounting bracket (not supplied) here.

Auto setup

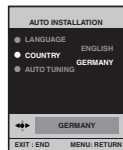
Your unit has an Automatic installation which makes installation in your unit easy. When you turn on the unit for the first time, the Automatic installation routine is activated. Using this routine, you can select the on-screen language and automatically search for and store all the receivable channels. The Automatic station presetting feature is for the set's built-in tuner only. If you have a device such as a digital decoder (eg. Satellite or Digital Terrestrial) connected (see page 43), you would need to tune it in separately according to its own instructions.

Preparation:
Press \odot /I (Power) on the unit or press \odot /I (On/Standby) on the remote control.

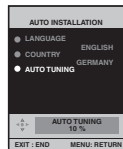
- AUTO INSTALLATION** menu will appear. Press \blacktriangle or \blacktriangledown to select LANGUAGE, then press ENTER. Press \blacktriangle or \blacktriangledown to select desired language. Then press ENTER.



- Press \blacktriangle or \blacktriangledown to select COUNTRY, then press ENTER. Press \blacktriangle or \blacktriangledown to select your country. Then press ENTER.



- Press \blacktriangle or \blacktriangledown to select AUTO TUNING, then press ENTER. The confirmation screen will be displayed. Press ENTER to start automatic tuning. Your TV will now automatically tune in all available channels.



Note:

- Please be patient - the Auto Tuning process can take several minutes to complete.

When the programme on the screen stops changing and the sound comes on, the search process is complete.



- Note:**
 - To cancel the Auto Tuning, press EXIT during the process.

THE AUTOMATIC TUNING PROCESS WILL ONLY START BY ITSELF THE FIRST TIME YOU SWITCH THE SET ON. HOWEVER YOU CAN RESTART THIS PROCESS VIA THE MENU SYSTEM (see page 12).

Quick guide for MENU operation/Selecting the video input source/On-screen Language Selection

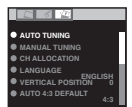
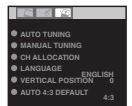
Make sure the aerial connection and power supply are connected as per the description on previous page.

- Preparations:**
 - Turn on the unit with the \odot /I (Power) button on the unit. The \odot /I (Power) indicator will light up in green.
 - To change the unit to standby mode, press \odot /I (Power) on the remote control. \odot /I (Power) indicator will change from green to red. To turn on the unit from standby mode, press \odot /I on the remote control again.
 - In standby mode, you can also turn the unit on with \odot (Channel) \wedge or \vee on the unit or P+/P- on the remote control.
 - To turn off the unit press \odot /I (Power) button on the unit - to completely switch it off, disconnect the mains power supply.
 - Press TV/DVD to select the TV mode.

Quick guide for MENU operation

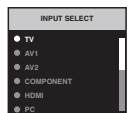
Call MENU and for example: Select AUTO TUNING.

- Press INPUT. Select TV. Press MENU.
- Press \blacktriangle or \blacktriangledown to select \mathbb{M} .
- Press \blacktriangle or \blacktriangledown to select AUTO TUNING, then press ENTER to enter the AUTO TUNING menu.
 - ... on the following pages the MENU can be called in the same way as here.
- Press EXIT to return to the normal screen.



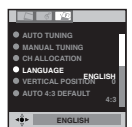
Selecting the video input source

Press INPUT to view a signal from another device connected to your TV, such as a VCR or DVD player. You can select each input source depending on which input jacks you used to connect your devices. To select the video input source, press \blacktriangle / \blacktriangledown . Then press ENTER within 6 seconds.

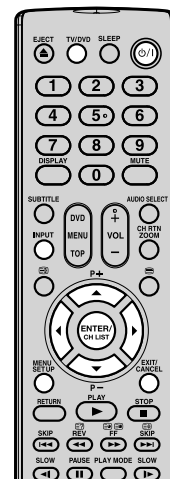


On-screen Language Selection

- Select LANGUAGE (unless you have already selected when the set was first switched on). Then press ENTER.



- Press \blacktriangle or \blacktriangledown to select the desired language.
- Press EXIT to return to the normal screen.



Note:

- If no buttons are pressed for more than approx. 60 seconds, the MENU disappears automatically.

Automatic station presetting with the built-in Tuner/ Changing the order of stored channels

Automatic station presetting with the built-in Tuner
Perform this feature to search for and store new TV programmes after the Automatic installation. (see page 10)

Preparation:
Make sure your antenna is connected to the aerial input (see page 9). Select TV (see page 11). Then press **MENU**.

1 Select **AUTO TUNING**, then press **ENTER**.

2 Select **COUNTRY**, then press **ENTER**.
Press **◀** or **▶** to select your country, then press **ENTER**.

3 Select **START**. Then press **ENTER**.

The automatic tuning will search for available broadcasts and should store the channels in the correct order. During the search the sound is muted. When all programs have been stored, the normal TV screen will appear.

Changing the order of stored channels
The Automatic station presetting stores the stations in a specific order. However, this order can be changed if you wish.

1 Select **CH ALLOCATION**. Then press **ENTER**.

2 Select desired option, then press **ENTER**.

3 After setting the each option, press **MENU** to return to **CH ALLOCATION** menu.

4 Press **EXIT** to return to the normal screen.

Description about the each setting option:

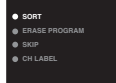
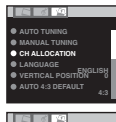
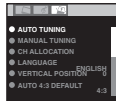
Sort: Press **▲** or **▼** to select the channel that you want to move, then press **ENTER**.

Press **▲** or **▼** to select the position that you want to move the channel to, then press **ENTER**.

Erase Program: Press **▲** or **▼** to select the channel that you want to erase, then press **ENTER**.

Skip: Press **▲** or **▼** to select the channel that you want to skip, then press **ENTER**. * mark will appear.

CH LABEL: Press **▲** or **▼** to select channel that you want to rename, then press **ENTER**. Press **▲** or **▼** to select character, then press **◀** or **▶**. The cursor will move to the next position. Press **ENTER** to set the channel label.



- Note:**
- When the **COUNTRY** is set to UK, the automatic tuning will search for UHF broad-casts only.
 - When changing the order of the channels, it is best to start with Ch1.

12

Manual TV station presetting

If you like, you may manually tune a certain station into a selected program position, without deleting or modifying program position's contents. Example: Store the BBC 2 into program position 2.

1 **Preparation:** connect aerial cable. Select program position 2. Press 2 (see page 14). OSD will indicate "2" in right upper corner. Eventually recently stored TV-channel's name might also appear.

2 Press **MENU**. Press **◀** or **▶** to select tool-page (see right). Press **▲** or **▼** to select **MANUAL TUNING**. Press **ENTER**.

3 Press **▲** or **▼** to select **COLOUR SYSTEM**, then press **ENTER**. Press **◀** or **▶** to select **AUTO**, **PAL** or **SECAM**, then press **ENTER**.

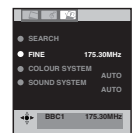
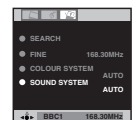
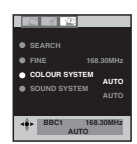
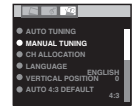
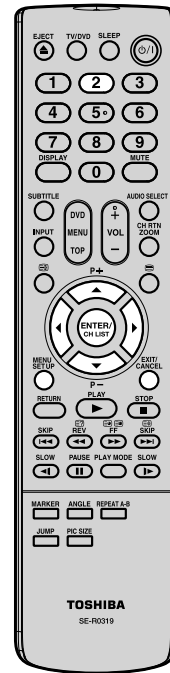
4 Press **▲** or **▼** to select **SOUND SYSTEM**, then press **ENTER**. Press **◀** or **▶** to select **AUTO**, **B/G**, **L**, **D/K** or **L/L**, then press **ENTER**.

5 Press **▲** or **▼** to select **SEARCH**. Press **ENTER**. Press **◀** or **▶** to start tuning. Tuning will stop automatically at next available station. If this does not happen to be the BBC 2, press **◀** or **▶** again to continue tuning for the BBC 2. Then press **ENTER**.

6 If you like to use fine-tuning, select **FINE** and press **ENTER**. Press **◀** or **▶** to fine tune. See the note on this page.

7 To store other stations in additional memory-cells, repeat steps 1 to 6.

8 Press **EXIT** to return to the normal screen.



- Note:**
- Usually fine tuning is not necessary, due to tuning's automatically stopping at the very best position. If you fine-tune anyway, proper working of teletext-reception with built-in tuner is no longer guaranteed.

13

Basic Operation

Channel selection

With the **numbered buttons**.

Example:

- No. 2: Press **0** and within 2 seconds, press **2**.
- No. 29: Press **2** and within 2 seconds, press **9**.

Press **P +** or **-** to change up or down a channel. This takes approx. 2 seconds. If the auto search only stored 5 stations, only these 5 will appear. Skipped channels will not appear (see page 12).

The **CH LIST** shows a list of all receivable programmes. They are located in channels 1 to 99.

Press **CH LIST** to display the **CH LIST**.

Press **▲** or **▼** to select the desired channel.

Press **CH LIST** to display the selected channel. Press **EXIT** to exit.

QuickView

CH RTN button allows you to go back to the last selected channel.

Volume adjusting

Press **VOL +** or **-** to adjust the volume. The volume level indicator disappears after 4 seconds.

MUTE

Press **MUTE**. The sound will be cut off. **MUTE** will appear for approx. 4 seconds.

The muting can be released by pressing **MUTE** again or **VOL +** or **-**.

Information display

Press **DISPLAY**. Channel number and picture size setting will appear for approx. 4 seconds.

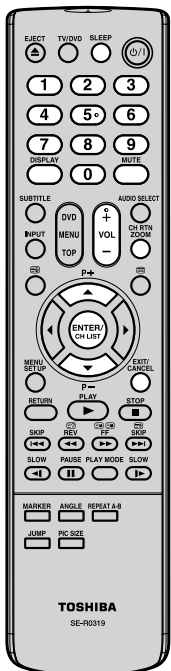


SLEEP TIMER

To set the sleep timer press **SLEEP**, **SLEEP** and the minutes will appear. Each time you press **SLEEP**, the **SLEEP** time shown will change in the order of 120, 110, 100, 90, 80, 70, 60, 50, 40, 30, 20, 10, 0. When the displayed time runs out, the unit will switch to standby. The display will disappear after approx. 4 seconds.

To cancel the sleep timer:

Press **SLEEP** repeatedly until '0' appears.



- Note:**
- If the built-in tuner does not receive anything (e.g. if no antenna is connected) during TV-operation, then the TV-unit will change to standby after approx. 15 minutes.

14

Teletext

Teletext is sent page by page. This unit is able to automatically store up to 256 pages, but they can only be accessed once they have been stored. This can take a few moments.

Fastext/TOPText

The **Fastext/TOPText** is teletext with a special directory.

On the lower part of the screen there are four different coloured fields (red, green, yellow and blue). These fields lead directly to the pages shown within. The coloured buttons on the remote control correspond to the coloured fields. Press the appropriate coloured button in order to activate the desired colour field.

Switch on / off Teletext

Teletext is not transmitted by all channels.

Select a channel that shows teletext.

Press **TELETEXT**. You will now see a teletext page. (If "100" is shown without any text information, it may mean that the channel you have selected does not support teletext.)

Press **TELETEXT** again in order to switch off teletext.

Press **TELETEXT** again in order to switch on teletext again.

The last page which was stored is now shown.



Note:

- You cannot select any other channels as long as teletext is switched on. Switch teletext off when you want to switch over to another channel.

Select Page

Press **P +** or **-** until the page you desire appears. Or ... enter the requested page number by using the **10 Number Buttons**.

And if you mistype something, just enter the complete 3-digit wrong page number then enter the desired number again. Or ... press one of the coloured teletext buttons so that a page from **Fastext/TOPText** is shown.

Hold Pages

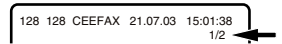
Some pages are divided up into subpages by the channel.

Subpages are automatically shown in turn, as they are transmitted. In order to hold the page, press **TELETEXT** again in order to display the next subpage.

Directly Select Subpages

You can directly select the subpages if required.

Example:
Page 128 from Teletext comprises of 2 subpages. In the right upper corner you will, for example, see 1/2. That means that page one of 2 subpages is being shown at the moment.



Press **TELETEXT** in order to select subpage 2. 4 dashes (----) are shown. Enter **0 0 2**. It can take a minute before subpage 0002 appears.

Press **TELETEXT** again in order to switch off the subpage feature.

You can only select other teletext pages when the subpage feature is switched off.

Enlargement

In order to enlarge the display, press **ENLARGE**.

Either the upper or lower half of the screen is enlarged. Each time you press **ENLARGE** you switch between the display of the upper or lower half of the screen or the full picture.

Answering Quiz Questions

Some pages contain quiz questions with concealed answers.

Press **TELETEXT** in order to show the answers.

Page 100

Press **ENTER** in order to show page 100.

15

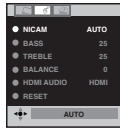
Stereo reception with the built-in tuner

The built-in Tuner can detect and receive NICAM stereo broadcasts automatically.



NICAM stereo sound reception:

- Select NICAM, then press **ENTER**. Press **◀** or **▶** to select AUTO or OFF. Select OFF if you do not want to receive NICAM sound.



- Press **EXIT** to return to the normal screen.

The following types of broadcast are possible with NICAM transmissions

'NICAM ST' illuminates for approx. 4 seconds when a NICAM STEREO broadcast signal is received.



'NICAM M1' illuminates for approx. 4 seconds when a NICAM MONO A broadcast signal is received.



'NICAM M1/M2' illuminates for approx. 4 seconds when a NICAM MONO A and MONO B broadcast signal is received.



This will be displayed for approx. 4 seconds if a NICAM signal is received when the 'NICAM OFF' option is selected.



Stereo reception in Germany

'STEREO' illuminates for approx. 4 seconds when a STEREO broadcast signal is received.



When 2-channel sound reception is available, you can select your preferred audio with the **AUDIO SELECT** button.

Each time you press **AUDIO SELECT**, the sound channel will switch to the alternative channel available.

NICAM 2-channel sound reception (not available in Germany)



2-channel sound reception in Germany



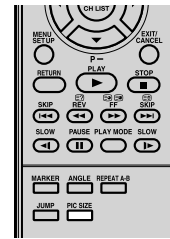
- Note:**
- In case of bad reception, the stereo sound also can be disturbed.

Picture format

The broadcaster may transmit a Wide Screen Signalling (WSS) signal which can determine the correct picture width and set it automatically when the AUTO setting is used. If you want to change this setting, you can select from the formats listed below.

AUTO

Press **PIC SIZE** repeatedly until AUTO appears.



Notes:

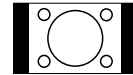
- When the PICTURE SIZE is set to AUTO, the aspect ratio will automatically change according to the Wide Screen Signalling (WSS) signal, if it is available. This may be either transmitted by the broadcasting TV channel, or via a recording from a VCR etc. Any WSS signal received will only be effective in the AUTO mode - however, some DVD players / Digital Decoders etc. will automatically switch the aspect ratio via the SCART input (Pin 8 switching), even if AUTO is not selected.
- In any case if you want to change to a different aspect ratio to the one selected automatically, you can change it by pressing **PIC SIZE**.
- In PC mode, the PICTURE SIZE feature is available only for 16:9 or 4:3 format. (In 'WXGA INPUT' mode, the PICTURE SIZE feature is not available.)
- In HDMI or COMPONENT mode of scanning rate: 720p and 1080i, the PICTURE SIZE feature is available only for 16:9 format.
- Using the special functions to change the size of the displayed image (i.e. changing the height/width ratio) for the purposes of public display or commercial gain may infringe on copyright laws.

Manual format setting

Pressing **PIC SIZE** repeatedly scrolls through the following options.

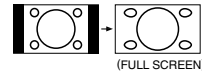
4:3

This mode shows a 4:3 picture in its original size and shape with vertical bands on the left and right side.



FULL SCREEN

Stretches the left and right hand sides of a 4:3 picture horizontally to fill the screen, while leaving the centre of the picture unstretched.

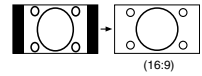


Note:

- In this mode the picture is geometrically distorted on the left and the right sides of the screen.

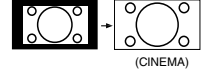
16:9

This mode is used with 16:9 signals from a Digital decoder, DVD player or other external source. This uniformly stretches a 4:3 image horizontally to fill the screen (For example, a 16:9 image is often stored "anamorphically" on a DVD, where the 16:9 image is stored as a horizontally compressed 4:3 image - this mode restores the image to its correct 16:9 proportions).



CINEMA:

This mode is used to zoom-in on (expand) 4:3 'letterbox' format pictures (with black bars at the top and bottom) so that they fill more of the screen.

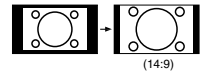


Note:

- In the CINEMA mode, part of the picture may be slightly cut off due to the expansion. However, it is possible to scroll the picture up or down to view the top or bottom part of the picture (see page 18).

14:9

This enlarges a 4:3 picture to the 14:9 format.



Other convenience functions

You can change the default settings to convenience use.

Icon	Selected Items	Setup hint
	PICTURE PREFERENCE	Bright and dynamic picture (factory-set) STANDARD Standard picture quality (factory-set) MOVIE Movie-like picture setting (factory-set) MEMORY Your personal preferences
	BRIGHTNESS / CONTRAST / COLOUR / TINT(NTSC) / SHARPNESS	You can adjust the picture to your preference. The "TINT(NTSC)" option can be selected if an NTSC 3.58MHz or NTSC 4.43MHz signal is input through one of the AV sockets, and NTSC or AUTO has been selected for the AV COLOUR option.
	COLOUR TEMPERATURE	Bluish (COOL) / Neutral (MEDIUM) / Reddish (WARM)
	BLUE BACK	ON / OFF You can set the TV to automatically change to a blue screen and mute the sound if the signal is weak or absent.
	BACKLIGHT	You can use the Back light feature to adjust the screen brightness for improved picture clarity.
	RESET	Select "RESET" to reset PICTURE PREFERENCE, BRIGHTNESS, CONTRAST, COLOUR, TINT(NTSC), SHARPNESS, COLOUR TEMPERATURE and BACKLIGHT to the factory preset values.
	NICAM	See page 16.
	BASS / TREBLE / BALANCE HDMI AUDIO	You can adjust the sound quality to your preference. See page 42.
	RESET	Select "RESET" to reset BASS, TREBLE and BALANCE to the factory preset values.
	AUTO TUNING	See page 12.
	MANUAL TUNING	See page 13.
	CH ALLOCATION	See page 12.
	LANGUAGE	See page 11.
	VERTICAL POSITION	When the CINEMA mode is selected (see page 17), you can adjust the vertical picture position. Press ◀ or ▶ to adjust the vertical position of the picture by up to +10 and downwards by up to -10.
	AUTO 4:3 DEFAULT*	4:3 / 16:9 This option selects the default way that a 4:3 signal is shown - either as normal "4:3" or expanded in the "16:9" mode, according to your preferences.
	AV1 OUTPUT	See page 46.
	AV COLOUR	See page 46.
	RESET TV SETTING	Press ENTER to enter the RESET TV SETTING screen. Press ▲ or ▼ to select "YES", then press ENTER . Reset the TV function will now begin, and this unit will automatically turn off. As the power is not automatically turned on, press ⏻ to watch TV.

- Note:**
- * AUTO 4:3 DEFAULT is available only for AUTO picture size setting.
 - In COMPONENT mode, AUTO 4:3 DEFAULT is available only for 480i/576i mode.

Disc

DVD discs must be Region 2 or Region ALL type to play on this unit. The suitable disc formats are: DVD-Video, DVD-R/RW (Video format only), Audio CD, CD-R/CD-RW and Video CD.

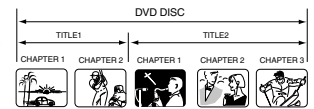
Some CD-R/RW discs may be incompatible.

- This unit can not insert an 8cm disc. Please do not use a disc adapter. It may cause trouble.
- Please do not play any disc of an irregular shape into the unit, as it may interfere with the function of the unit. You may not be able to remove it.
- Please do not use after market accessories, such as a ring protector, as this may cause trouble with the operation of the unit.

Do not play DVD-ROM, DVD-Audio, CD-G, Photo CD or SVCD to prevent accidental erasure of prerecorded material.

Title

When two or more movies are recorded on a disc, the disc is divided into two or more sections. Each section is called a "TITLE".

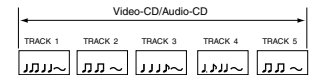


Chapter

The titles can be subdivided into many sections. Each section is called a "CHAPTER".

Track

Video CD/Audio CD can contain several items. These are assigned to tracks.



Removing Disc from Case

Be sure to hold the edge of disc. Do not touch the surface of the disc.

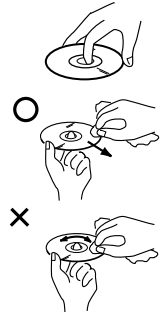
- Do not scratch the disc.
- Do not get dirt on the surface of the disc.
- Do not stick a label or adhesive tape on the disc.
- Do not drop or bend the disc.

Storing Disc

- Store the disc in the case to avoid risk of scratches, dirt or damage.
- Do not leave disc exposed to direct sunlight or in hot or humid places.

Cleaning Disc

- Wipe the disc with a clean, dry cloth from center to edge.
- Do not wipe in circular direction.
- Do not use liquid or aerosol cleaners.



On Video CDs

This unit supports Video CDs equipped with the PBC (Version 2.0) function. (PBC is the abbreviation of Playback Control.) You can enjoy two playback variations depending on types of discs.

- Video CD not equipped with PBC function (Version 1.1) Sound and movie can be played on this TV/DVD in the same way as an audio CD.
- Video CD equipped with PBC function (Version 2.0) In addition to operation of a Video CD not equipped with the PBC function, you can enjoy playback of interactive software with search function by using the menu displayed on the TV screen (Menu Playback). Some of the functions described in this owner's manual may not work with some discs.

To turn off the PBC

- Press **PLAY MODE** in the Stop mode.
- Press **▲/▼** to select "Mode", then press **ENTER** repeatedly until "Off" appears.
- Press **PLAY MODE** again to clear the screen.

To turn on the PBC

Follow the above step 1-2, then press **ENTER** repeatedly until "PBC" appear.

This section shows you the basics on how to play a disc.

Basic playback (DVD/VCD/Audio CD)

Preparation

Make sure that the **(O/I)** (Power) switch on the unit is pushed in (ON). (The **(O/I)** (Power) indicator lights up.)

- 1 Press **TV/DVD** on the remote control to select the DVD mode.
- 2 Place the disc in the disc slot with the label side facing forward. (If the disc has a label.)

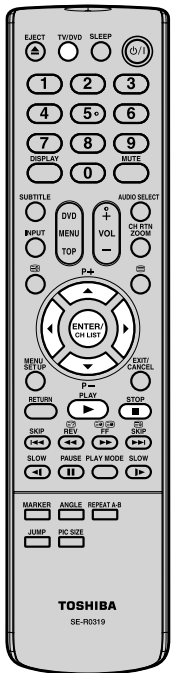


- Do not place a disc which is unplayable in this unit.
- 3 On the TV-screen, "**▲**" changes to "Reading" and then playback commences.
 - A menu screen will appear on the TV screen if the disc has a menu feature.
 - Press **▲/▼/◀/▶** to select title, then press **ENTER**. Title is selected and play commences.



- 4 Press **■** to end playback.
 - The unit records the stopped point, depending on the disc. "**■**" appears on the screen. Press **PLAY** (▶) to resume playback (from the scene point).
 - If you press **■** again ("**■**" appears on the screen.), the unit will clear the stopped point.

To start playback in the stop mode
Press **PLAY** (▶).



- Note:**
- If the unit does not operate properly: Static electricity, etc., may affect the player's operation. Disconnect the AC power cord once, then connect it again.
 - If a disc is inserted during some modes other than DVD mode, it may switch to DVD mode and then playback may be begun automatically.

To pause playback (still mode)

Press **■** during playback.
To resume normal playback, press **PLAY** (▶).

- The sound is muted during still mode.

To stop playback

Press **■**.

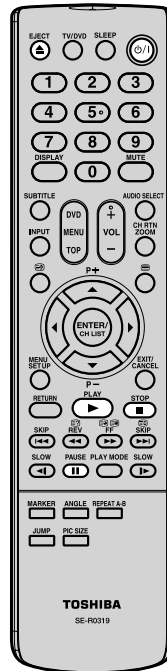
To remove the disc

Press **▲**.

Remove the disc after the disc comes out.

Note:

- If a non-compatible disc is loaded, "Incorrect Disc", "Region Code Error" or "Parental Error" will appear on the TV screen according to the type of loaded disc. In this case, check your disc again (see pages 19 and 38).
- Some discs may take a minute or so to start playback.
- When you set a single-faced disc label backwards (i.e. the wrong way), "Reading" will appear on the display for a few minutes and then "Incorrect Disc" will continue to be displayed.
- Some discs may not work the resuming facility.
- Resuming cannot function when you play a PBC-featured Video CD while the PBC is on. To turn off the PBC, see page 19.
- Some playback operations of DVDs may be intentionally fixed by software producers. Since this unit plays DVDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs.
- Do not move the unit during playback. Doing so may damage the disc.
- In many instances, a menu screen will appear after playback of a movie is completed. Prolonged display of an on-screen menu may damage your television set, permanently etching that image onto its screen. To avoid this, be sure to press **(O/I)** on your remote control once the movie is completed.
- There may be a slight delay between the button is pressed and the function activates.



You can play discs at various speeds.

Playing in fast reverse or fast forward directions (DVD/VCD/Audio CD)

Press **◀◀** or **▶▶** during playback.

◀◀: Fast reverse playback

▶▶: Fast forward playback

Each time you press **◀◀** or **▶▶**, the playback speed changes.

To resume normal playback

Press **PLAY** (▶).

Note:

- The unit mutes sound during reverse and forward scan of DVD/VCD/Audio CD discs.
- The playback speed may differ depending on the disc.
- You can use fast reverse/fast forward playback for DivX® CD.

Playing frame by frame (DVD/VCD)

Press **■** during still playback.

Each time you press **■**, the picture advances one frame.

To resume normal playback

Press **PLAY** (▶).

Note:

- You can use frame by frame playback for DivX® CD.
- The sound is muted during frame by frame playback.

Playing in slow-motion (DVD/VCD)

Press **◀|** or **|▶** during playback.

Each time you press **◀|** or **|▶**, the slow-motion speed changes.

To resume normal playback

Press **PLAY** (▶).

Note:

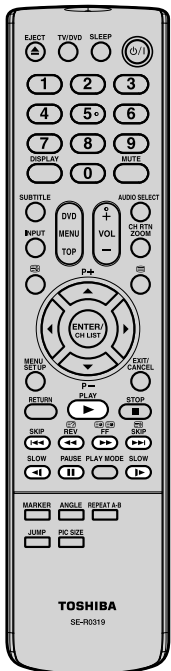
- The sound is muted during slow-motion playback.
- You can use slow motion playback for DivX® CD.
- Reverse slow (**◀|**) does not work on VCD and DivX® CD.

Locating a chapter or track (DVD/VCD/Audio CD)

Press **SKIP** **◀◀** or **▶▶** repeatedly to display the chapter or track number you want.
Playback starts from the selected chapter or track.

To locate succeeding chapters or tracks, press **SKIP** **▶▶**. Playback starts from the beginning of the current chapter or track.

To locate the preceding chapter or track, press **SKIP** **◀◀** twice in quick succession. Playback starts from the beginning of the preceding chapter or track.



- Note:**
- A prohibition symbol "X" may appear at the upper right of the screen. This symbol means either the feature you tried is not available on the disc, or the unit cannot access the feature at this time. This does not indicate a problem with the unit.

Zooming (DVD/VCD)

This unit will allow you to zoom in the frame image. You can then make selections by switching the position of the frame.

- 1 Press **ZOOM** during playback.



The centre part of the image will be zoomed in. Each press of **ZOOM** will change the ZOOM Q1(x 1.3), Q2(x 1.5) and Q3(x 2.0).

- 2 Press **▲/▼/◀/▶** to view a different part of the frame.

You may move the frame from the centre position to UP, DOWN, LEFT or RIGHT direction.

- 3 In the zoom mode, press **ZOOM** repeatedly to return to a 1:1 view (Q Off).

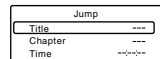
Note:

- You can select the Pause or Slow in the zoom mode.
- Some discs may not respond to zoom feature.
- Zoom function can be used for DivX® CD.

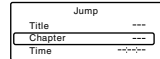
Locating desired scene (DVD/VCD/Audio CD)

Use the title, chapter and time recorded on the DVD disc to locate the desired point to playback. In the case of VCD/Audio CD discs, time and track are used to locate the desired point to playback. To check the title, chapter/track and time, press **DISPLAY**.

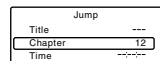
- 1 Press **JUMP** during playback or resume stop mode.



- 2 Press **▲** or **▼** to select the "Title/Track", "Chapter" or "Time".



- 3 Press **Number buttons (0-9)** to input the number.



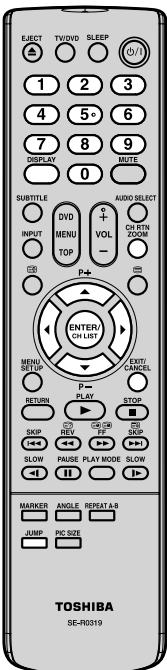
- If you input a wrong number, press **CANCEL**.
- Refer to the package supplied with the disc to check the numbers.

- 4 Press **ENTER**. Playback starts.

- When you change the title, playback starts from Chapter 1 of the selected title.
- Some discs may not work in the above operation.

Note:

- In case of the Audio CD and Video-CD, only Track and Time can be selected.
- In case of the Video-CD playback with PBC, the JUMP does not work. Turn off the PBC (see page 19).
- Only Time search function can be used for DivX® CD.

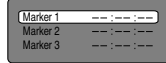


Marking desired scenes

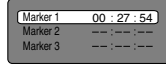
Marking the scenes (DVD/VCD/Audio CD)

The unit stores the points that you want to watch again up to 3 points. You can resume playback from each scene.

1 Press **MARKER** during playback.



2 Select the blank Marker using **▲** or **▼**. Then press **ENTER** at the desired scene.

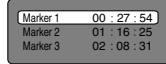


• Repeat this procedure to set the other 2 scenes.

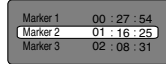
3 Press **MARKER** to clear this display.

Returning to the scenes (DVD/VCD/Audio CD)

1 Press **MARKER** during playback or stop mode.



2 Press **▲** or **▼** to select the Marker 1-3.



3 Press **ENTER**.

Playback starts from the marked scene.

To cancel the Marker

Follow the above steps 1-2, then press **CANCEL**.



Note:

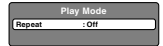
- Some discs may not work with the marking operation.
- The marking is cancelled when you eject the disc or turn the power off.
- Some subtitles recorded around the marker may fail to appear.
- In case of Video CD with PBC, Marker function is prohibited.
- Marker function does not work with MP3/JPEG CD/DiVX® CD.

Repeat playback/A-B Repeat playback

Repeat playback (DVD/VCD)

1 Press **PLAY MODE** during playback or stop mode.

2 Press **ENTER** repeatedly to select "Chapter" or "Title".



The unit automatically starts repeat playback after finishing the current title or chapter.

[Video CD]

Press **▼** to select "Repeat".

Press **ENTER** to select "Track" or "All".

• If you set the repeat mode during stop mode, press **PLAY** (▶) to start Repeat playback.

3 Press **PLAY MODE** again to clear the screen.

To resume normal playback

Select Repeat: "Off" in step 2.

Note:

- Some discs may not work with the repeat operation.
- In case of Video CD with PBC, Repeat functions are prohibited during playback.
- Chapter/Track repeat function is cancelled whenever **SKIP** (◀◀) or **SKIP** (▶▶) is pressed.

A-B Repeat playback (DVD/VCD/Audio CD)

A-B repeat playback allows you to repeat selection between two selected points.

1 Press **REPEAT A-B** during playback. The start point is selected.



2 Press **REPEAT A-B** again.



The end point is selected. Playback starts at the point that you selected. Playback stops at the end point and returns to Point A automatically, then starts again.

To resume normal playback

Press **REPEAT A-B** again.

"Off" appears on the screen.

Note:

- In A-B Repeat mode, subtitles near the A or B locations may not be displayed.
- You may not be able to set A-B Repeat for the scenes that include multiple angles.
- A-B Repeat playback does not work when Repeat playback is activated.
- You may not be able to set A-B Repeat during certain scenes of the DVD.
- A-B Repeat does not work with an interactive DVD and MP3/JPEG CD.
- In case of Video CD with PBC, A-B Repeat is prohibited.

Changing angles/Title selection/DVD menu

Changing angles (DVD)

When playing back a disc recorded with multi-angle facility, you can change the angle that you are viewing the scene from.

1 Press **ANGLE** during playback. The current angle will appear.



2 Press **ANGLE** repeatedly until the desired angle is selected.

Note:

- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

Title selection (DVD)

Two or more titles are recorded on some discs. If the title menu is recorded on the disc, you can select the desired title.

1 Press **TOP MENU** during playback. Title menu appears on the screen.

2 Press **▲/▼/◀/▶** to select the desired title.

3 Press **ENTER** or **PLAY** (▶). The playback of the selected title will start.

Note:

- Depending on the DVD, you may not be able to select the title. Depending on the DVD, a "title menu" may simply be called a "menu" or "title" in the instructions supplied with the disc.

DVD menu (DVD)

Some DVDs allow you to select the disc contents using the menu.

When you playback these DVDs, you can select the subtitle language, soundtrack language, etc. using the menu.

1 Press **DVD MENU** during playback. The DVD menu appears on the screen.

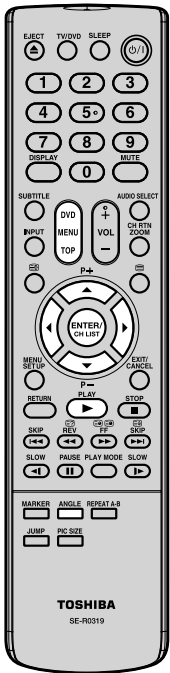
• Press **DVD MENU** again to resume playback at the scene when you pressed **DVD MENU**.

2 Press **▲/▼/◀/▶** to select the desired item.

3 Press **ENTER**. The menu continues to another screen. Repeat steps 2 and 3 to set the item completely.

Note:

- Depending on the DVD, you may not be able to resume playback from the scene point when you press **DVD MENU**.

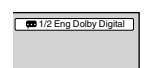


Changing soundtrack language/Subtitles/Disc status

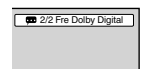
Changing Soundtrack Language (DVD/VCD)

You can select the language when you play a multilingual disc.

1 Press **AUDIO SELECT** during playback. The current soundtrack language will appear.



2 Press **AUDIO SELECT** repeatedly until the desired language is selected.



• The on screen display will disappear after a few seconds.

In case of Video CD playback

Audio type changes as follows each time you press **AUDIO SELECT**.



Subtitles (DVD)

When playing back a disc recorded with subtitles, you can select the subtitle language or turn the subtitle off.

1 Press **SUBTITLE** repeatedly during playback until the desired language is selected.



2 To turn off the subtitle, press **SUBTITLE** until "Off" appears.



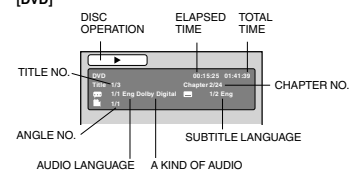
• The on screen display will disappear after a few seconds.

Disc status (DVD/VCD)

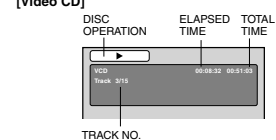
With press of **DISPLAY**, the status of the disc will appear on the screen.

To cancel the display, press **DISPLAY** again.

[DVD]



[Video CD]



Note:

- If the desired language is not heard after pressing the button several times, the language is not recorded on the disc.
- The selected soundtrack language is cancelled when you eject the disc. The initial default language or available language will be heard if the disc is played back again.
- Depending on the DVD, you may not be able to change subtitles, or to turn subtitles on or off.
- While playing a DVD, the subtitle may change when you loaded or eject the disc.
- In some cases, a selected subtitle language may not be changed immediately.

MP3/JPEG/DivX® and Audio CD operation

This unit can playback the MP3/JPEG/DivX®-data which has been recorded on CD-R/RW. Audio CD also can be played back. To produce the MP3/JPEG/DivX®-data, you need a Windows-PC with CD-RW drive and a MP3/JPEG/DivX®-encoding Software (not supplied). The Apple-HFS-System cannot be played. This unit requires discs/recordings to meet certain technical standards in order to achieve optimal playback quality.

There are many different types of recordable disc formats (including CD-R containing MP3 files). Not all recordable discs will produce optimal playback quality. The technical criteria set forth in this instruction manual are meant only as a guide. Use of CD-RW for MP3 files is not recommended.

MP3/JPEG/DivX® - data information

Limitations on MP3/JPEG/DivX® playback

- MP3/JPEG/DivX® CD are standardized by ISO9660, its file name must include following extensions; ".mp3", ".jpg", ".div", ".divx", ".avi".
- MP3/JPEG/DivX® CD must be corresponded to the ISO standardized files.
- This unit can read 2000 files per disc. If one disc has more than 2000 files, the remaining files will be omitted.
- MP3/JPEG/DivX® CDs cannot be used for the purpose of recording on this unit.
- It may take more than one minute for this unit to read MP3/JPEG/DivX® files depending on its structure.
- Music recorded by "Joliet Recording Specification" can be played back.
- The music files recorded by "Hierarchical File System" (HFS) cannot be played.

Limitations on displaying of the file name.

- The maximum number for display is 15 characters. Long file names will be condensed.
- Available characters for display are the following: capital or small alphabets of A through Z, numbers of 0 through 9, and _ (under score).
- Other characters than those above are replaced in hyphen.

To playback MP3/JPEG/DivX® CD in the recorded order.

- Use MP3/JPEG/DivX® software that records data alphabetically or numerically.
- Insert two or three digit number in the head of file name. (ex. "01" "02" or "001" "002").
- Refrain from making too many sub-folders.

CAUTION:

- Some MP3/JPEG/DivX® CDs cannot be played back depending on the recording conditions.
- The CD-R/RW that has no music data or non MP3/JPEG/DivX® files cannot be played back.

Standard sampling frequency and the bit rate:

MP3

MPEG-1 Audio
32kHz, 44.1kHz, 48kHz
32kbps ~ 320kbps (constant bit rate or variable bit rate)
The recommend recording setting for a high-quality sound is 44.1kHz of sampling frequency and 128kbps of constant bit rate.

DivX® video

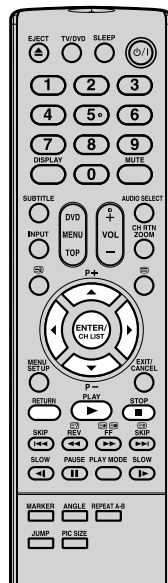
DivX® version: DivX® 3, 4, 5, and 6 (specifically 3.1.1, 4.1.2, 5.0.2, 5.0.5, 5.1.1, 5.2.1, 6.0 at Home Theater profile).

Audio format: MPEG1 Layer2 (MP2), MPEG1 Layer3 (MP3)

Sampling frequencies: 32kHz, 44.1kHz, 48kHz

Bit rate: 32kbps ~ 320kbps

Resolution: Max 720 x 576 (at 25fps), Max 720 x 480 (at 30fps)



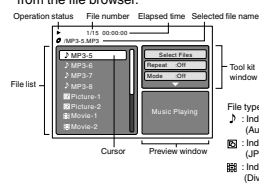
Note:

- MP3 file on the Kodak Picture CD is not recognized on this unit.
- During MP3/JPEG-Playback, you cannot use JUMP and A-B Repeat functions.
- You can use Repeat (Track or All), Random functions and Program playback for MP3/JPEG/DivX®-Playback (See pages 32, 33)

MP3/JPEG/DivX® and Audio CD operation

Loading CD

- Load a MP3/JPEG/DivX® CD or an Audio CD into the disc slot.
- A file browser screen will appear on the screen.
 - In case the current directory includes 9 files or more, press ▲ or ▼ to scroll in the file list.
 - To see contents in folder, select the folder and then press ENTER. To return to the parent directory, select "Go Up ..." then press ENTER.
 - In case of a CD containing a mixture of MP3, JPEG and DivX® files, the files are played back by selected them from the file browser.



MP3 and Audio CD playback

- In the file browser, press ▲/▼ to select the desired file.

When PLAY (▶) is pressed after displaying file browser displayed, playback begins automatically starting from the first file. In this case, if the first file is an MP3 file, only MP3 files are played back in order.

If the first file is a JPEG file, the first JPEG file is played back. If the first file is a DivX® file, the first DivX® file is played back. If there is no file at a root directory, playback does not begin automatically.

- Press ENTER.

The selected file starts playing back.

- Press ■ to end playback.

- The unit records the stopped point. "■" appears on the screen. Press PLAY (▶) to resume playback (from the scene point).
- If you press ■ again or unload the disc, the unit will clear the stopped point.

Select Files

The file type to make it display in the file browser can be chosen.

- Press ◀ or ▶ to select "Select Files" at right column in the file browser. ("Select Files" is not applicable to Audio CD.)
- Press ENTER, then press ▲ or ▼ to select file type from the list (Music, Picture or Movie).
- Press ENTER to add/remove check mark. Checked file type will be displayed in the file browser.
- Press RETURN to save the setting.

MP3/JPEG/Divx® and Audio CD operation

JPEG playback

- In the file browser, press ▲/▼ to select the desired JPEG file.

To display a thumbnail list, press DVD MENU. Press ▲/▼/▶ to select the desired file. (To return to the file browser, press TOP MENU.)

When PLAY (▶) is pressed after displaying the file browser, playback begins automatically starting from the first file. In this case, if the first file is a JPEG file, the first JPEG file is played back.

If the first file is an MP3 file, only MP3 files are played back in order. If the first file is a DivX® file, the first DivX® file is played back. If there is no file at a root directory, playback does not begin automatically.

- Press ENTER. The selected picture appears on the screen.

Rotating an image

You can rotate an image by 90 degrees. Press ANGLE during playback of the image. "■", "■", "■" or "■" appears on the screen.

Zooming an image

Zoom function also can be used in viewing JPEG files. Press ZOOM (See "Zooming" on page 23).

- Press ■ to end playback. The file browser appears on the screen. If you want to watch the other file, repeat steps 1 - 2.

Slide show playback

The slide show enables you to view pictures (files) one after another automatically.

Preparation

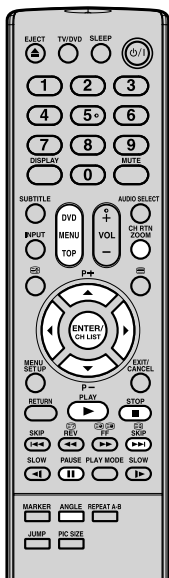
Set "JPEG Interval" setting to "Off", "5 Seconds", "10 Seconds" or "15 Seconds" (See page 37).

- Select your desired starting file for the slide show in step 1 above.

- Press ENTER or PLAY (▶) to start slide show from the selected file.
 - If you press ■ during the slide show, the slide show stops temporarily. "■" appears briefly on the screen. Press PLAY (▶) or SKIP (▶▶) again to resume the slide show.
 - If the picture appears upside down or sideways, press ANGLE repeatedly until it's right side up. "■", "■", "■" or "■" appears on the screen.
 - When the slide show playback finished, the file list appears.
 - To stop the slide show, press ■. The file list appears.

Note:

- During JPEG playback, you cannot use Jump and A-B Repeat functions.
- When an image exceeds 5760 x 3840 pixels, the entire image (preview window or thumbnail list) may not be displayed on a screen.
- It may have a longer interval due to the size of data.



MP3/JPEG/Divx® and Audio CD operation

DivX® playback

- In the file browser, press ▲/▼ to select the desired file. When PLAY (▶) has been pressed after the file browser displayed, playback begins automatically starting from the first file. In this case, if the first file is a JPEG file, the first JPEG file is played back. If the first file is a DivX® file, the first DivX® file is played back. If the first file is an MP3 file, only MP3 file are played back in order. If there is no file at a root directory, playback does not begin automatically.

- Press ENTER or PLAY (▶). The selected DivX® movie will be played back on the TV screen.

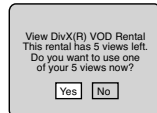
- Press STOP (■) to end playback.

- The unit records the stopped point. "■" appears on the TV screen. Press PLAY (▶) to resume playback (from the scene point).
- If you press STOP (■) again or unload the disc, the unit will clear the stopped point. To watch the other file, repeat steps 1 - 2.

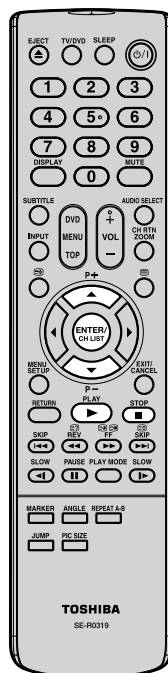
Playing DivX® VOD content

DivX® VOD content is protected by DRM (Digital Rights Management) system. This restricts playback of content to specific registered devices.

If the incorrect DRM file is loaded, "Authorization Error This player is not authorized to play this video." will appear on the screen. When you attempt to play DivX® VOD, the number of plays is limited and the right message will appear on the screen. If you wish to play it, select "Yes".



- If the number of plays goes over the limit, then "Rental Expired" will be displayed. In this case, the file will not be played.



Note:

- In order to play DivX® VOD content on this unit, you first need to register the unit with registration code. See page 38.
- Depending on the recording conditions of DivX® file, you may not be able to use fast reverse/forward playback or JUMP function. See pages 22, 23.

Repeat playback (Audio CD/MP3/JPEG/DivX®)

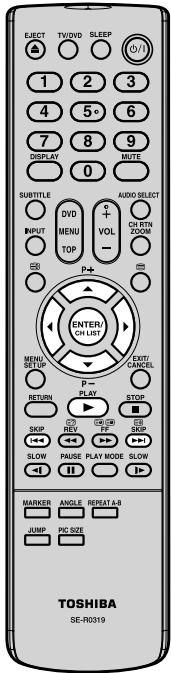
- In the file browser, press ▲/▼/◀/▶ to select "Repeat" during stop mode.
- Press **ENTER** repeatedly to select "Track" or "All".
- Press **PLAY** (▶). The unit automatically starts repeat playback after finishing the current track.

To resume normal playback
Select Repeat : "Off" in step 2.

Random playback (Audio CD/MP3/JPEG/DivX®)

- In the file browser, press ▲/▼/◀/▶ to select "Mode" during stop mode.
- Press **ENTER** to select "Random".
- Press **PLAY** (▶). The Random playback will start.

To resume normal playback
Select Mode : "Off" in step 2.



- Note:**
- The repeat or random function is cancelled when you eject the disc or turn the power off.
 - The track repeat function is cancelled when **◀** or **▶** is pressed.
 - In case of Audio CD, the function of A-B Repeat also can be used. See "A-B Repeat playback" (See page 25).

Program playback (Audio CD/MP3/JPEG/DivX®)

- In the file browser, press ▲/▼/◀/▶ to select "Edit Mode", then press **ENTER**.
When "Edit Mode" is black color, you can mark the files which you want to add into Program list.
- Press ▲/▼/◀/▶ to select the file you want to add into the program list.
Press **ENTER**. Selected file was marked. Repeat this procedure to select the other files.
- Press ▲/▼/◀/▶ to select "Add To Program". Then press **ENTER**. All marked files are added into the program list. (The maximum number of files can be added is 30.)

When you finish storing the files you want into the Program list, select "Edit Mode" again and press **ENTER** to release edit mode.

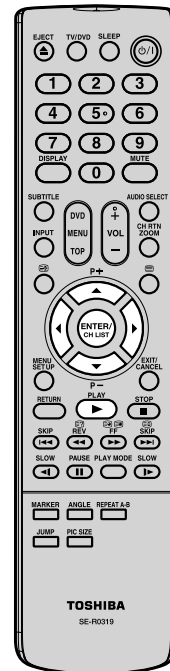
- Press ▲/▼ to select "Program View", then press **ENTER**. Program View shows only the programmed files that you have added in Step 2.



- In the Program View, press **PLAY** (▶). The files start to playback in programmed order that were added by you.

To remove file from program list in stop mode
In the Edit Mode, switch to Program View. Select the files you want to remove, then press **ENTER**. Select "Clear Program" and press **ENTER**. Marked file is removed from program list.

- Note:**
- The program function is cancelled when you eject the disc or turn the power off.



Program playback/Random playback

You can arrange the playback order of tracks or files on the disc. And the unit can also select tracks or files at random and playback them. These feature works for Video CD. For Audio CD and MP3/JPEG/DivX® CD, please see "Random playback (Audio CD/MP3/JPEG/DivX®)" on page 32 and "Program playback (Audio CD/MP3/JPEG/DivX®)" on page 33.

Program playback (VCD)

- Press **PLAY MODE** during stop mode.
- Press ▲/▼ to select "Mode", then press **ENTER** to select "Program".
- Press ◀/▶ to select the programming position. Use **Number buttons (0-9)** to input the track numbers on sequentially.
 - If you input a wrong number, press **CANCEL**.
- Press ◀/▶ to return to the left column, then press ▲/▼ to select the "Program Playback" and press **ENTER**.

The programs you selected will start to playback in order.
• To resume normal playback, select Mode "Off" in step 2.

To change the program

- Select Mode to "Program" (as step 2), press ▲/▼/◀/▶ to select the track number you want to change, then press **CANCEL**.
- Press **Number buttons (0-9)** to overwrite the new track number.

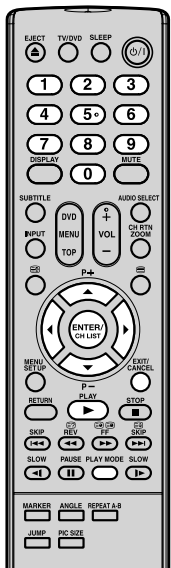
To clear the program one by one
Select Mode to "Program", press ▲/▼/◀/▶ to select the track number. Then press **CANCEL**.

To clear all the programs
In the above column, press ▲/▼ to select "Clear Program". Then press **ENTER**.

Random playback (VCD)

- Press **PLAY MODE** during playback or stop mode.
- Press ▲/▼ to select "Mode", then press **ENTER** to select "Random".
- Press **PLAY** (▶). The Random Playback will start.
 - If you set "Random" during playback mode, Random playback will begin after the track that is currently being played has ended.
 - To resume normal playback, select Mode "Off" in step 2.

- Note:**
- In case of Video CD with PBC, you cannot set Program playback.
 - The program is cancelled when you eject the disc or turn the power off.
 - In case of Video CD with PBC, you cannot set Random function during playback.

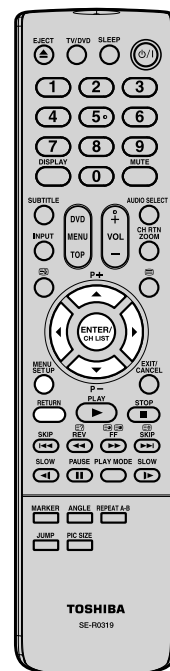


Customizing The Function Settings

You can change the default settings to customize performance to your preference.

Setting procedure

- Press **SETUP** in stop mode.
The following on-screen display appears.
- Press ▲ or ▼ to select the desired section, then press ▶ or **ENTER**.
- First option will be highlighted. Press ▲ or ▼ to select the desired option.
- Then press ▶ or **ENTER**. The selectable settings will appear.
- Change the selection using ▲ or ▼, by referring to the corresponding pages 36 ~ 38. Press **ENTER** to save the setting.
 - Repeat steps 3 and 5 to change other option.
 - To select another section, go back to step 2 by pressing ◀ or **RETURN** repeatedly.
- To clear **SETUP** screen, press **SETUP** or press **RETURN** repeatedly.



Setting details

Section	Option	Details	Page
	Menu	To select the language of "Menu", "Subtitle" and "Audio" if more than one languages are available on the disc.	36
	Subtitle	To select a preferred language for on screen display.	
	OSD	To select a preferred language for on screen display.	
	TV Screen	To select a picture size according to the aspect ratio of your TV.	37
	Display	To turn On or Off the operational status display on the screen.	
	Picture Mode	To select a preferred picture mode from "Video", "Film" or "Auto".	
	JPEG Interval	To select a preferred setting for the slide show playback.	38
	Night Mode	To select On or Off for Night Mode.	
	Digital Out	To select a digital output sound format corresponding to your system connection.	
	Parental	To select a preferred parental level for the parental setting.	38
	Password	To change the password.	
	DivX(R) VOD	To display your 8-character registration code.	

Customizing The Function Settings



Menu, Subtitle, Audio

You can select the language of "Menu", "Subtitle" and "Audio" if more than one language is recorded onto the disc.

English, Francais, Espanol, Deutsch, Italiano:
The selected language will be heard or seen.

Other:
Other languages can be selected (see "Language Code List" on page 40).

Off (Subtitle):
Subtitles do not appear.

Original (Audio):
The unit will select the first priority language of each disc.

Note:

- If the selected language is not recorded on the disc, the first-priority language is selected.

OSD
The setup language can be selected.

English: To display OSD language is English
Francais: To display OSD language is French
Espanol: To display OSD language is Spanish
Deutsch: To display OSD language is German
Italiano: To display OSD language is Italian

TV Screen
You have the following screen sizes to choose from:

4:3 (Letterbox)
When playing back a wide screen-DVD disc, it displays the wide picture with black bands at the top and bottom of screen.

4:3 (Panscan)
It displays the wide picture on the whole screen with left and right edges automatically cut off.

16:9 (Wide screen)
A wide screen picture is displayed full size, although the image on the screen may be geometrically distorted in this mode because the TV screen has an aspect ratio of 4:3 not 16:9.

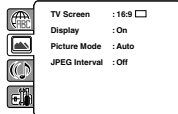
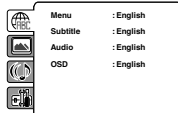
Note:

- If the DVD disc is not formatted in the pan & scan style, it displays 4:3 style.

Display
On screen display can be switched on or off when you press any buttons.

Off: On screen displays do not appear when you press any buttons except **SUBTITLE, PLAY MODE, MARKER, DISPLAY, AUDIO SELECT** and **JUMP**.

On: On screen displays appear when you press the buttons (factory setting).



Customizing The Function Settings

Picture Mode

There are two types of source content in pictures recorded in DVD video discs: film content (pictures recorded from films at 24 frames per second) and video content (video signals recorded at 30 frames per second). Make this selection according to the type of content being viewed.

Auto: Select this selection normally.
The DVD player automatically detects source content, film or video of playback source, and converts that signal in an appropriate method.

Film: The DVD player converts film content pictures appropriately. Suitable for playback of film content pictures.

Video: The DVD player filters video signal, and converts it appropriately. Suitable for playback of video content pictures.

Note:

- Depending on the disc, pictures may be cut off or doubled. In this case, select "Video".

JPEG Interval

You can continuously playback all JPEG files automatically. After the selection below, the disc will start playback on JPEG files which have been recorded.

Off: Plays back one file at a time.
5 Seconds: Plays back images in the form of a slide show at 5 second intervals.

10 Seconds: Plays back images in the form of a slide show at 10 second intervals.

15 Seconds: Plays back images in the form of a slide show in 15 second intervals.

Night Mode

Night Mode enables you to control the dynamic range so as to achieve a suitable sound for your equipment.

Off: It plays back at the recording level on the disc.
On: Loud sound such as explosion is toned down slightly when played back. This is suitable when it is connected to a stereo.

Note:

- This function works only when the disc recorded with Dolby Digital is played back.
- The level of Night Mode may differ depending on DVD video disc.

Digital Out

You can select the digital output sound format corresponding to your system connection.

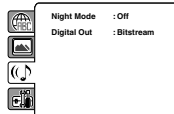
Off: There is no sound output from DIGITAL AUDIO OUT jack. Change Dolby Digital to PCM for the output.

PCM: Select when connected to a 2 channel digital stereo amplifier.

Bitstream: Disc audio bitstream data will be output.

Note:

- Even if you select "Bitstream", MPEG Audio will be output in PCM format.



Customizing The Function Settings



Parental

Some discs are specified as not suitable for children. Such discs can be limited not to playback with the unit.

- Press **▲** or **▼** to select "Parental", then press **ENTER**. "Enter Password" screen will appear.
- Press "0000" using **Number buttons (0-9)**. (Please note, this is pre-setting password of this unit). Then press **ENTER**. The parental level list will appear.

Level 1: DVD software for adults cannot be played back.
Level 8: Virtually all DVD software can be played back.
Level Off: The parental control setting does not function.

- Press **▲** or **▼** to select from the level 1 to level 8. The limitation will be more severe as the level number is lower. Then press **ENTER**.
- Press **▲** to activate Parental control setting.

Note:

- If each setup (pages 36 ~ 38) has been completed, the unit can always work under the same condition (especially with DVD discs). Each setup will be retained in the memory even if you turn the power off.
- Depending on the discs, the unit cannot limit playback.
- Some discs may not be encoded with specific rating level information though its disc jacket says "adult." For those discs, the age restriction will not work.
- The password is required every time when you change the parental level.
- If you input a wrong number, press **CANCEL**.

Password

- Press **▲** or **▼** to select "Password", then press **ENTER**. "Enter Current Password" screen will appear.
- Press **Number buttons (0-9)** to input the current password (If the password has not been set yet after you purchase this unit, it is "0000").
- Then press **ENTER**. "Enter New Password" screen will appear. Press **Number buttons (0-9)** to input the new password.
- Press **ENTER**. Now your new password has been set. Be sure to remember this number!

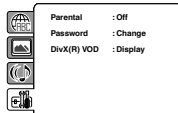
If you forget the password.

- Press **▲** to remove the disc.
- While holding **7** down on the remote control and at the same time press **STOP** (DVD) on the side panel. "Password Clear" appears on the screen. Now the password has been returned to the initial value ("0000").

DivX(R) VOD

In order to play DivX® VOD (Video On Demand) content on this unit, you first need to register the unit with your DivX® VOD content provider. You do this by generating a DivX® VOD registration code, which you submit to your provider.

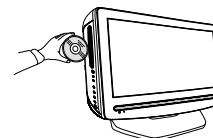
- Press **▲** or **▼** to select "DivX(R) VOD". Then press **ENTER**. Your 8-character registration code is displayed. Make a note of the code as you will need it when you register with a DivX® VOD provider. Then press **ENTER** to select Done.



Temporary cancel the rating level by DVD disc

Depending on the DVD disc, the disc may try to temporarily cancel the rating level that you have set. It is up to you to decide whether to cancel the rating level or not.

- Load a DVD disc.



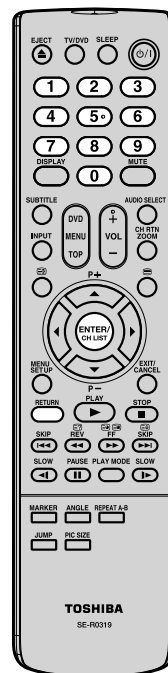
- If the DVD disc has been designed to temporarily cancel the Rating level, the screen which follows the "Reading" screen will change, depending on which disc is played. If you select "YES" with the **ENTER**, password input screen will then appear.

- Enter the password with **Number buttons (0-9)**. Then press **ENTER**.



To exit from the entry, press **RETURN**.

- Playback will commence if the entered password was correct.



Note:

- This temporary cancellation of rating level will be kept until the disc is ejected. When the disc is ejected, the original rating level will be set again automatically.

Language Code List

Enter the appropriate code number for the initial settings "Menu", "Subtitle" and/or "Audio" (see pages 36).

Language Name	Code	Language Name	Code	Language Name	Code	Language Name	Code
Abkhazian	1112	Fiji	1620	Lingala	2224	Singhalese	2919
Afar	1111	Finnish	1619	Lithuanian	2230	Slovak	2921
Afrikaans	1116	French	1628	Macedonian	2321	Slovenian	2922
Albanian	2927	Frisian	1635	Malagasy	2317	Somali	2925
Amharic	1123	Galician	1722	Malay	2329	Spanish	1529
Arabic	1128	Georgian	2111	Malayalam	2322	Sundanese	2931
Armenian	1835	German	1415	Maltese	2330	Swahili	2933
Assamese	1129	Greek	1522	Maori	2319	Swedish	2932
Aymara	1135	Greenlandic	2122	Marathi	2318	Tagalog	3022
Azerbaijani	1136	Guarani	1724	Moldavian	2325	Tajik	3017
Bashkir	1211	Gujarati	1731	Mongolian	2324	Tamil	3011
Basque	1531	Hausa	1811	Nauru	2411	Tatar	3030
Bengali, Bangla	1224	Hebrew	1933	Nepali	2415	Telugu	3015
Bhutani	1436	Hindi	1819	Norwegian	2425	Thai	3018
Bihari	1218	Hungarian	1831	Oriya	2528	Tibetan	1225
Breton	1228	Icelandic	1929	Panjabi	2611	Tigrinya	3019
Bulgarian	1217	Indonesian	1924	Pashto, Pushto	2629	Tonga	3025
Burmese	2335	Interlingua	1911	Persian	1611	Turkish	3028
Byelorussian	1215	Irish	1711	Polish	2622	Turkmen	3021
Cambodian	2123	Italian	1930	Portuguese	2630	Twi	3033
Catalan	1311	Japanese	2011	Quechua	2731	Ukrainian	3121
Chinese	3618	Javanese	2033	Rhaeto-Romance	2823	Urdu	3128
Corsican	1325	Kannada	2124	Romanian	2825	Uzbek	3136
Croatian	1828	Kashmiri	2129	Russian	2831	Vietnamese	3219
Czech	1329	Kazakh	2121	Samoan	2923	Volapük	3225
Danish	1411	Kirghiz	2135	Sanskrit	2911	Welsh	1335
Dutch	2422	Korean	2125	Scots Gaelic	1714	Wolof	3325
English	1524	Kurdish	2131	Serbian	2928	Xhosa	3418
Esperanto	1525	Laothian	2225	Serbo-Croatian	2918	Yiddish	2019
Estonian	1530	Latin	2211	Shona	2924	Yoruba	3525
Faroese	1625	Latvian, Lettish	2232	Sindhi	2914	Zulu	3631

PC connection

As PCs are sometimes supplied with a 'conventional' CRT monitor, you may need to adjust the display settings of your PC's graphics card, otherwise the pictures may not appear correctly. Switch on your PC (still with your original monitor) - select '1360 x 768' for the screen resolution, and select 60 Hz for the on-screen refresh rate. Switch off your PC, then connect it to your LCD TV while both items are still switched off.

Monitor Display modes

MODE	Resolution	V. Frequency	H. Frequency	Pixel Clock Frequency
VGA	640 x 480	60.000Hz	31.500kHz	25.200MHz
SVGA	800 x 600	60.317Hz	37.879kHz	40.000MHz
XGA	1024 x 768	60.004Hz	48.363kHz	65.000MHz
WXGA	1280 x 720	59.870Hz	47.776kHz	79.500MHz
WXGA	1280 x 768	59.939Hz	44.955kHz	74.175MHz
WXGA	1360 x 768	60.015Hz	47.712kHz	85.500MHz

(according to Graphic card)

Select PC input

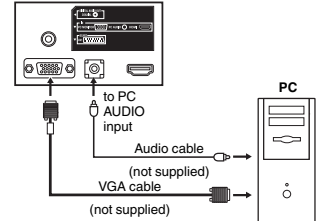
Switch on the LCD-TV. Select the PC input mode (see page 11).

Note:

- If there is no video signal from the computer when the unit is in PC mode, "NO SIGNAL" will appear on the TV screen.
- Digital PC connection via HDMI input is not supported. If you try to connect your PC digitally anyway, the TV-operation might freeze. TV will stop to respond properly on usercommands. Countermeasure: Switch-off your TV and disconnect from the 220-240V power-supply. Now you may retry operating your TV.
- If a digital PC connection does show a picture, proper working is not guaranteed. Digital PC connection is not granted for this TV.

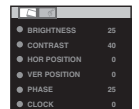
Use a PC-VGA cable (not supplied) to connect the LCD-Monitor to your PC. Make the connections carefully so as not to break or bend the contacts inside the plug.

TV (Back side view)



Example: Adjust the contrast.

- During PC mode press MENU. The Menu will appear on the screen.



- Select CONTRAST, then press ENTER. Press ◀ or ▶ to adjust CONTRAST.
- Press EXIT to return to the normal screen.

Description about the each setting option:

PICTURE Menu

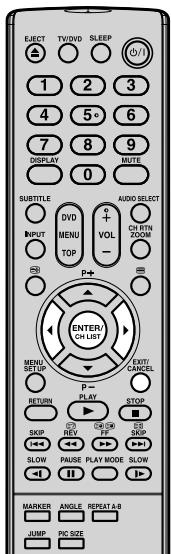
BRIGHTNESS and CONTRAST: You can adjust these according to your personal preferences.
HOR POSITION and VER POSITION: to adjust the horizontal and vertical placing of the image.
PHASE and CLOCK: eliminates the horizontal (PHASE) and vertical (CLOCK) interfering lines.
RED/GREEN/BLUE: influences the colour balance.
BACKLIGHT: Press ◀ or ▶ to adjust the level you require.
WXGA INPUT: When you input a WXGA signal, set this option to "ON".
RESET: Press ENTER to reset BRIGHTNESS, CONTRAST, RED, GREEN, BLUE and BACKLIGHT to the factory preset values.

AUDIO Menu

BASS/TREBLE/BALANCE: Tone setting menu.
RESET: Press ENTER to reset BASS, TREBLE and BALANCE to the factory preset values.

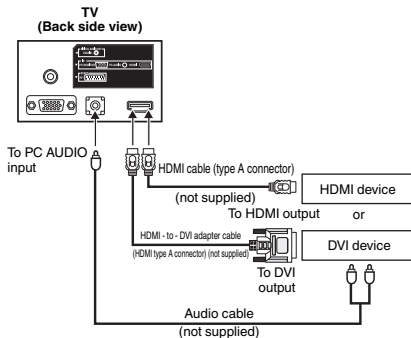
Connecting an HDMI or a DVI device to the HDMI input

The HDMI input receives digital audio and uncompressed video from a HDMI equipped device or uncompressed digital video from a DVI equipped device. When you connect to a DVI device with a HDMI-to-DVI adapter cable, it only transfers the video signal, so it is necessary to use separate analogue leads to transfer the audio signals. Select the HDMI input mode (see page 11).



- Note:**
- This set is classed as "HD-Ready". This means that it is capable of displaying HD (High Definition) signals when connected to a suitable HD source, such as an HD receiver or DVD player that has HD capability, via HDMI, DVI, or Component Video connections.
 - Some devices may not operate properly with the TV.

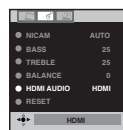
HDMI
 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.



Selecting the HDMI audio input source

You must choose the appropriate HDMI audio input setting for each connection, depending on whether the source is equipped with a DVI or HDMI socket.

- Select HDMI AUDIO then press ENTER. Press ◀ or ▶ to select HDMI or DVI.



- Press EXIT to return to the normal screen.

- Note:**
- Follow the user's manual that came with the HDMI-system, which you try to connect to this TV. If there is no picture available via HDMI-connection, do connect via SCART-cable first. Use the HDMI-system's remote-control to call the HDMI-system's setup-menu onto the screen.
 - Follow the HDMI-system's manual, to set its video-output to HDMI.
 - When successfully set to HDMI, select this TV's HDMI-input, as described in here on page 11 (Select Video Input).

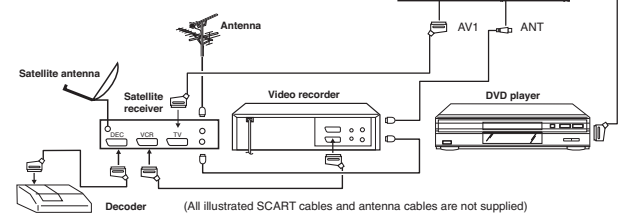
Connection to other equipment

1. Connecting other units to your TV

Caution. Before connecting:

- Make sure to disconnect the appliance from the power supply in order to avoid any potential damage from occurring.
- Make sure to establish the required connection.
- Make sure that connections are properly and correctly attached before connecting the appliances to the power supply.

Connect with Satellite receiver as shown below. Select the TV-Program at the satellite receiver. To do this, use the remote control of the satellite receiver. You cannot store the same station once again additionally in LCD-Monitor which already stored in satellite receiver.



Note:

S-Video signals can be played back through the AV2 input (see page 45).

2. Connecting a DVD player

TV (Back side view)



To ensure optimum picture quality, select RGB for the DVD player's output signal (see Owner's manual of the DVD player). AV1 SCART is compatible with RGB signal. Select AV1 input mode to view (see page 11).

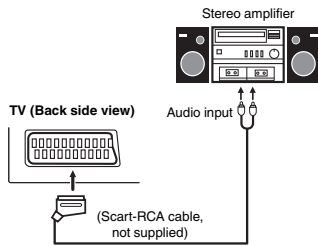
Connection to other equipment

3. Connecting an audio system

You can supply the TV sound to the stereo equipment with the scart socket. Use a special scart cable for the connection which sold at the accessory shop. (please consult your hi-fi instructions for details).

Note:

- The Bass/Treble/Balance adjustments (see P.18) only function with the sound from the TV speakers - it does not affect the audio output sockets.



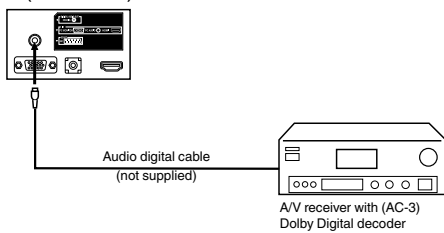
4. Connection of a digital amplifier or digital AV receivers (with DTS or Dolby Digital Decoder)

DTS and Dolby Digital are two different systems. DTS-DVDs cannot be played with a Dolby Digital receiver. Please use in this case a decoder that matches your DVDs.

Note:

- In earlier years Dolby Digital was known as AC-3. Nowadays only the name has changed. To enjoy Dolby Digital you may still use your "old" AC-3 decoder. Also the commercially available AC-3 DVDs can still be played with any Dolby Digital DVD player.

TV (Back side view)



- After connecting a Dolby Digital decoder please select in the DVD menu the Dolby Digital (DD) sound track option.
- Several DVDs may be pre-recorded on both sides however only one side contains the Dolby Digital sound track. Please insert the correct DVD side.
- When a DTS sound track is played the integrated loudspeakers are mute. The DTS sound can only be played digitally using the digital outlet. DTS decoder is necessary for hearing.

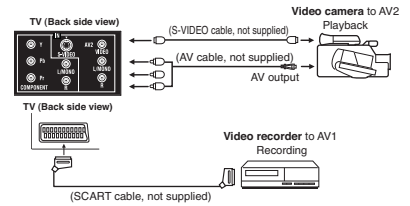
Connection to other equipment

5. Connecting Video camera and Video recorder

Select the "MONITOR" option in the SETUP menu (see No.7 on page 46). Select the AV2 input mode (see page 11). You can see the playback picture from video camera. This signal is output via AV1 and can be recorded by video recorder. With this arrangement, Video recorder will record exactly what is shown on the screen.

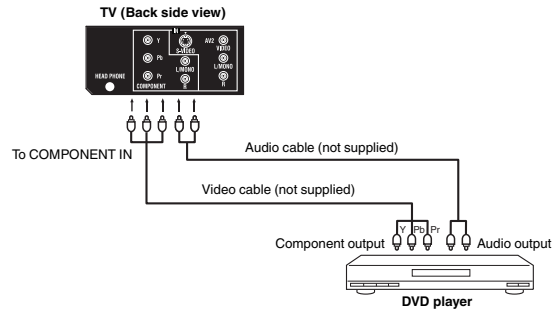
Note:

- If you have a camcorder with S-video, use an S-video cable instead of a standard video cable. Do not connect both a standard video cable and an S-video cable at the same time, or the picture performance will be unacceptable.
- When you input the PAL-M signal to AV2 input, select AV COLOUR setting to AUTO, otherwise the monochrome images will be displayed.



6. Connecting to a DVD player or other AV device with Component Video outputs

If your DVD player (or other device) has Component Video output jacks, use a suitable set of leads (RCA/Phono) to connect these to the Component Video inputs on this TV as shown - it can greatly enhance the picture quality and performance. Please remember that you will also need to connect separate leads (RCA/Phono) for the audio signals. Select the COMPONENT input mode (see page 11).



Note:

- The Component Video input of this unit are for use with equipment which outputs interlaced signals (PAL: 576i/1080i or NTSC: 480i/1080i) and progressive signals (PAL: 576p/720p or NTSC: 480p/720p).

Connection to other equipment

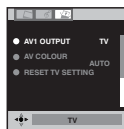
7. Setting of Scart socket

1 In select AV1 OUTPUT, then press ENTER.

2 This determines whether the AV1 outputs the signal from the internal tuner or whatever input is shown on the screen.

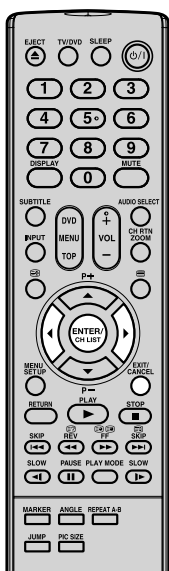
Press or to select TV or MONITOR.

TV: Outputs the last channel position selected.
MONITOR: The picture displayed on TV-screen



3 Press EXIT to return to the normal screen.

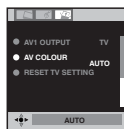
AV colour adjustment



The AV Colour setting only applies when viewing devices connected to the AV inputs.

1 In select AV COLOUR, then press ENTER.

2 Press or to select AUTO.



3 If AUTO option does not work, press or to select desired colour (e.g. NTSC 3.58).

4 Press EXIT to return to the normal screen.

Note:

- PAL is the colour system used in Germany. NTSC 3.58 is used in the USA, PAL 60 used in Germany handled video recorders, which play NTSC video tape recording.

If the picture shows horizontal stripes:
Set to AUTO as the description above.

Troubleshooting table

Please check the following list before requesting service.

Symptom	Possible solution	Page
TV		
No picture, no sound	Switch on the set. Check that the mains power outlet is properly connected. Select appropriate input mode. Unplug unit for 1 minute, then plug it back in.	6 9 11
No reception	Have you tuned in the TV stations? Connect the antenna. Make sure the set is ON and not in Standby mode	10, 11 9 9
The TV switches off with missing antenna input signal	This is normal. 15 minutes after the antenna signal has disappeared, the set will change to standby mode.	14
In menu, the TUNING option cannot be selected.	The unit is set to AV mode. Press 1 on the remote control.	11
Wrong Colours	Colour and Brightness errors can occur when the viewing angle / ambient air temperature (see technical specifications) are exceeded.	-
Blocky image or image stops intermittently.	Check all antenna connections. Move the antenna away from areas of possible interference. Try using an antenna booster.	9
DVD		
The playback picture has occasional distortion.	The disc is dirty. Eject the disc and clean it. Sometimes a small amount of picture distortion may appear. This is not a malfunction.	19, 20
The unit does not start playback.	No disc is inserted. Insert a disc. An unplayable disc is inserted. Insert a playable disc (Check the disc type and colour system). Place the disc in the disc slot with the label side facing forward. The disc is dirty. Clean the disc. Cancel the parental lock function or change the parental lock level.	20 19 20 38, 39
X appears on the screen.	The function is prohibited with the unit or the disc.	22

- The LCD panel is a very high technology product, giving you fine picture details. Occasionally, a few nonactive pixels may appear on the screen as a fixed point of blue, green or red. Please note that this does not affect the performance of your product.

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Specifications

TV	
System:	PAL UK, IR, CCIR, FRENCH System, B/G, D/K, I/I, L
Video Colour System:	PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
Preset channels:	99 channels
Frequency Range:	IreE2-E4, X-Z+2, S1-S10, E5-E12, S11-S41, E21-E69
LCD:	18.95" TYPE (48.14 cm visible) TFT low-glass Active Matrix Colour LCD, 1440 x 900 Pixel
HDMI input:	HDMI compliant (type A connector) HDCP compliant Suggested scan rates: PAL: 576i/576p/720p/1080i NTSC: 480i/480p/720p/1080i PC Audio: 2-channel PCM, 32/44.1/48 kHz sampling frequency 16/20/24 bits per sample
Audio Output Power:	approx. 1.5W (MAX) x 2
DVD	
Signal system:	NTSC, PAL (Region 2)
Applicable disc:	DVD (12cm, 8cm), CD (12cm, 8cm)
Output:	Audio : (RCA) -12,0 dBm, 1 k Ω Digital Audio : 0.5Vp-p/75 Ω
Pickup:	CD : Wavelength: 775 - 805 nm Maximum output power: 0.5 mW DVD : Wavelength: 640 - 660 nm Maximum output power: 1.0 mW
GENERAL	
Power Source:	AC 220-240V, 50Hz
Power Consumption:	Operation: approx. 55W at 230V, 50Hz Standby: approx. 1W at 230V, 50Hz
Weight:	5.1 kg
Dimensions:	47.2(W)x40.1(H)x20.7(D)cm
Surrounding temperature:	Operation: 5°C ~ 40°C/Storage: -20°C ~ 60°C
ACCESSORIES	
2 batteries (AAA/R03/UM-4)/Remote control unit/Aerial cable/AC cord	

Weight and Dimensions are approximate. Because we continually strive to improve our products we may change specifications and designs without prior notice.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a \triangle mark, the designated parts must be used.

4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the external exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Headphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

WHEN REPLACING DVD DECK

[When removing the DVD Deck]

Before removing Pick Up PCB and DVD MT PCB connector, short circuit the position shown in Fig. 1 using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[When installing the DVD Deck]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD MT PCB connector.

NOTE

- Before your operation, please read "REPARATION OF SERVICING".
- Use the Lead Free solder.
- Manual soldering conditions
 - Soldering temperature: $320 \pm 20^{\circ}\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
- When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to keep the Flux smoke away from it.

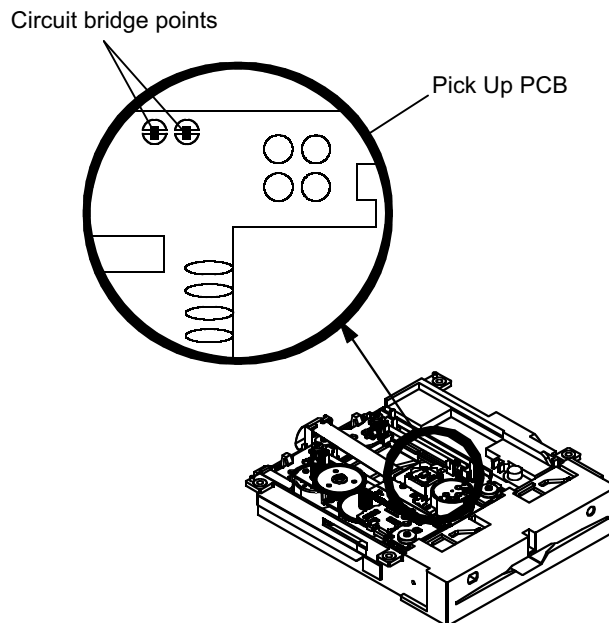


Fig.1

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and Angle Deck. (Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)
2. Slide the Belt Loading toward the arrow direction by hand to release the lock. (Refer to Fig. 1)
3. Take out the Disc from the DVD Deck. Be careful not to scratch on the Disc.

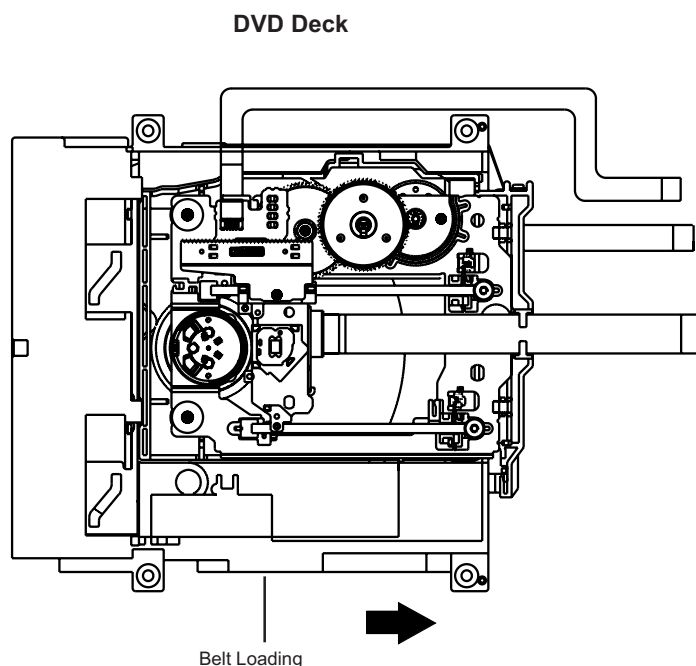


Fig. 1

PARENTAL CONTROL - RATING LEVEL 4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Check that "No disc" is displayed on the screen.
4. Press and hold the "STOP" button on the side panel.
5. Simultaneously press and hold the "7" key on the remote control unit.
6. Hold both keys for more than 2 seconds.
7. The On Screen Display message "PASSWORD CLEAR" will appear.
8. The 4 digit password has now been cleared.

TRAY LOCK

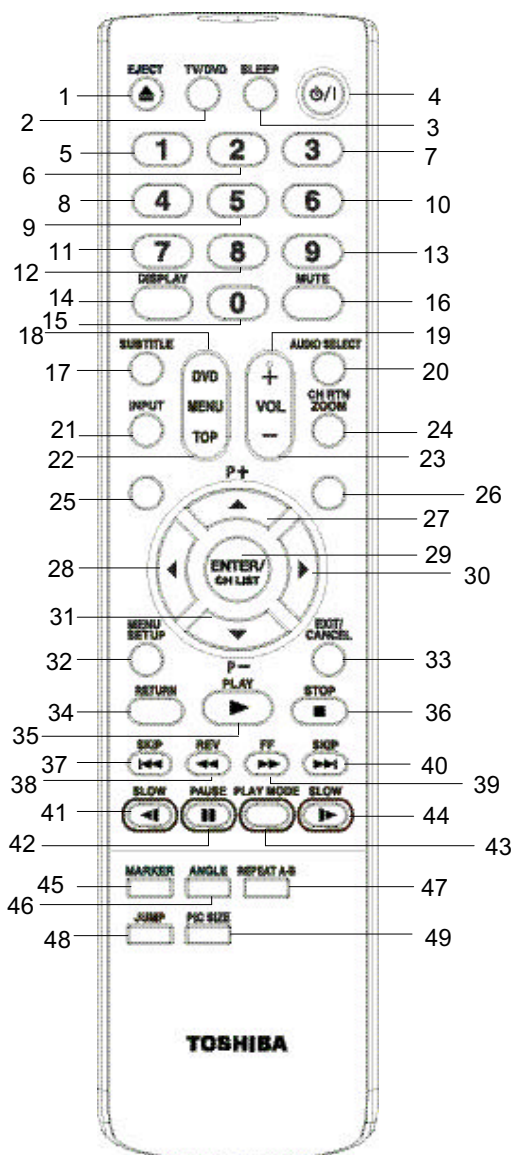
The disk cannot be taken out by setting the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Press it in order of "SETUP", "SUBTITLE", "3", "AUDIO SELECT" and "0" key of a remote control unit.
4. The On Screen Display message "🔒" will appear.
5. The Tray Lock has now been set up.

To unlock the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Press it in order of "SETUP", "SUBTITLE", "3", "AUDIO SELECT" and "0" key of a remote control unit.
4. The On Screen Display message "🔓" will appear.
5. The Tray Lock has now been cleared.

REMOTE CONTROL KEY CODE



NEC Format

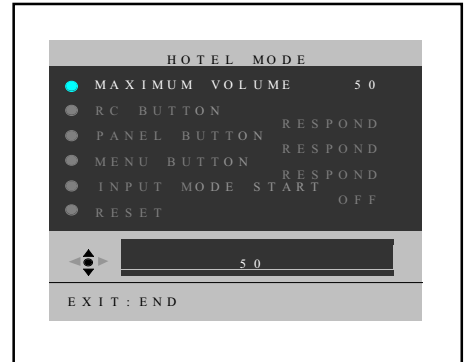
Custom Code : 40-BF H, 44-BB H, 45-BA H, 45-BC H

No.	Key Name	Custom Code	Key Code
1	EJECT	45 BA	F5
2	TV/DVD	45 BC	B3
3	SLEEP	40 BF	15
4	POWER	40 BF	12
5	1	40 BF	01
6	2	40 BF	02
7	3	40 BF	03
8	4	40 BF	04
9	5	40 BF	05
10	6	40 BF	06
11	7	40 BF	07
12	8	40 BF	08
13	9	40 BF	09
14	DISPLAY	40 BF	1C
15	0	40 BF	00
16	MUTE	40 BF	10
17	SUBTITLE	44 BB	87
18	DVD MENU	40 BF	19
19	VOLUME +	40 BF	1A
20	AUDIO SELECT	44 BB	53
21	INPUT	40 BF	0F
22	TOP MENU	44 BB	DF
23	VOLUME -	40 BF	1E
24	CH RTN/ZOOM	45 BA	40
25	HOLD	40 BF	53
26	TEXT/TV	45 BA	79
27	CH/PAGE ↑/↑	40 BF	3E
28	LEFT	44 BB	51
29	ENTER/CHANNEL LIST	40 BF	3D
30	RIGHT	44 BB	4D
31	CH/PAGE ↓/↓	40 BF	3F
32	MENU/SETUP	40 BF	0E
33	EXIT/CANCEL	44 BB	EF
34	RETURN	44 BB	5D
35	PLAY	44 BB	15
36	STOP	44 BB	14
37	SKIP-	45 BA	23
38	REVEAL / SEARCH-	45 BA	19
39	SUB PAGE / SEARCH+	45 BA	13
40	F/T/B / SKIP+	45 BA	24
41	RED / SLOW-	45 BA	0E
42	GREEN / PAUSE	45 BA	15
43	YELLOW / PLAY MODE	45 BA	E0
44	BLUE / SLOW+	45 BA	0D
45	MARKER	45 BA	EC
46	ANGLE	44 BB	96
47	REPEAT A-B	44 BB	5C
48	JUMP	44 BB	9B
49	PICTURE SIZE	40 BF	59

HOTEL MODE FUNCTION

To set the Hotel mode, please follow the steps below.

1. In power on mode, set the VOLUME to minimum.
2. Press and hold the VOLUME DOWN button on the side panel.
3. Simultaneously press and hold the channel button (7) on the remote control for more than 2 seconds.
4. The Hotel mode setting menu will appear.
5. Using the UP/DOWN button on the remote control, select the desired mode. Then press the ENTER button.
6. Using the LEFT/RIGHT button on the remote control, set the mode to desired setting.
7. The Hotel mode has now been set up.



To reset the Hotel mode, please follow the steps below.

1. In power on mode, set the VOLUME to minimum.
2. Press and hold the VOLUME DOWN button on the side panel.
3. Simultaneously press and hold the channel button (7) on the remote control for more than 2 seconds.
4. The Hotel mode setting menu will appear.
5. Using the UP/DOWN button on the remote control, select the RESET. Then press the ENTER button.
6. The setting items has now been returned to initial value.

Setting item	Setting value	Initial value	FUNCTION
Maximum volume	0~50	50	Setting of the maximum volume value.
RC button	RESPOND/ NO RESPOND	RESPOND	Effective/invalid setting of remote control key operation. (*Note 1)
Panel button			Effective/invalid setting of main key operation. (*Note 2)
Menu button			Effective/invalid setting of Menu key operation of set and remote control. (*Note 2)
Input mode start	1~99ch/DTV/AV1/ AV2/COMPO- NENT/HDMI1/PC/ DVD/OFF	OFF	Setting of input source at power supply On. (*Note 3). If setting except "OFF". (*Note 4)
Reset	—	—	Various settings of the Hotel mode function return initial State.

Note 1) Even if setting it to "No Respond", the remote control key operation in Hotel mode and service mode function are effective.

Note 2) Even if setting it to "No Respond", the service mode function are effective.

Note 3) If setting it to "OFF", it start up in same input source when you turn off the power before.

Note 4) Except "OFF" MENU Auto Tuning/ Manual Tuning/ CH Allocation/ Reset TV Setting can not select.

GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size	18.95 inch / 481.4mmV	
			LCD Type	Color TFT LCD	
			Number of Pixels	1440(H) x 900(V)	
			View Range	80/80 degree	
				Left/Right Up/Down	80/80 degree
				Bright Dot	$n \leq 0$
				Zero Bright Dot Ratio	--
		Color System		PAL / SECAM	
		Speaker		2 Speaker	
			Position	Front	
			Size	1.5 x 2.8 inch	
			Impedance	8 ohm	
		Sound Output	MAX	1.5W + 1.5W	
			10%(Typical)	--	
		NTSC3.58+4.43 / PAL60Hz		Yes	
G-2	DVD System	Color System		NTSC, PAL	
		Disc		DVD, CD-DA, CD-	
		Disc Diameter		120 mm , 80 mm	
		Drive		DSM-2	
		Search speed	Fwd		4 step
				Actual	2-45 times (DVD/Video CD)
					4-40 times (CD)
			Rev		4 step
				Actual	2-45 times (DVD/Video CD)
					4-40 times (CD)
	Slow speed	Fwd		1/7 -1/2 times	
			Actual	--	
		Rev		1/7 -1/2 times	
			Actual	--	
G-3	Tuning System	Broadcasting System	Analog	U.K., I.R., CCIR, FRENCH System B/G, D/K, I/I, L	
			Digital	--	
		Tuner and Receive CH	System	1Tuner (Analog)	
			Destination	UK, I.R., CCIR Hyper+France CATV	
		CH Coverage	Analog	IreE2-E4, X~Z+2, S1~S10, E5-E12,S11~S41,E21~E69	
			Digital	--	
		Intermediate	Analog		BG / II / DK, L / L' (SECAM VL)
		Frequency	Picture(FP)		38.9 / 38.9 / 38.9 / 33.9MHz
			Sound(FS)		33.4 / 32.9 / 32.4 / 40.4MHz
			FP-FS		5.5 / 6.0 / 6.5 / 6.5MHz
			Digital		--
		Auto Tuning Method			ALL Band (Not C.C.I.R. CH Plan)
		Preset CH	Analog		99
			Digital		--
Stereo/Dual TV Sound			Nicam/A2 Dual		
Tuner Sound Muting			Yes		
G-4	Signal	Video Signal	Input Level	1 V p-p/75 ohm	
			Output Level	1 V p-p/75 ohm	
			S/N Ratio (Weighted)	65dB	
			Horizontal Resolution at DVD Mode	400 Lines	
		RGB Signal	Output Level		--
		Audio Signal	Input Level		-8.0dBm/50k ohm
			Output Level	at DVD	-12.0dBm/1k ohm (-20dBFS 0dBFS=2.0Vrms)
				at TV	-8 dBm/1k ohm (0dBm=0.775Vrms)
			Digital Output Level		0.5 V p-p/75 ohm
			S/N Ratio at DVD (Weighted)		85dB
			Harmonic Distortion		0.02% (1KHz)
			Frequency Response :	at DVD	4Hz - 22kHz
				at Video CD	4Hz - 20kHz
				at SVCD	--
		at CD	4Hz - 20kHz		

GENERAL SPECIFICATIONS

G-5	Power	Power Source	AC DC	220-240V AC 50Hz ---	
		Power Consumption		at AC 55 W at AC 230 V 50 Hz at DC --	
		Stand by (at AC)	w/ EPG Timer w/o EPG Timer Per Year	-- 1 W at 230V 50Hz -- kWh/Year	
		Protector	Power Fuse	Yes	
G-6	Regulation	Safety Radiation X-Radiation		CE(EN60065:2002) CE ---	
G-7	Temperature	Operation Storage Space Around Unit		+5°C ~ +40°C -20°C ~ +60°C 100 mm(4inch)	
G-8	Operating Humidity			Less than 80% RH	
G-9	OSD Language	(TV)		English, Spanish, German, French, Italian, Swedish, Dutch, Russian, Portuguese, Turkish, Greek, Finnish, Polish, Danish, Norwegian	
		(DVD)		English, Spanish, German, French, Italian	
G-10	Clock and Timer	Sleep Timer	Max Time Step	120 Min 10 Min	
		On/Off Timer	Program(On Timer / Off Timer)	-- Program	
		Wake Up Timer		No	
		Timer Back-up (at Power Off Mode)	more than	-- Min Sec	
G-11	Remote Control	Unit		RC-PT	
		Glow in Dark Remocon		No	
		Remocon Format		TOSHIBA	
		Format		TOSHIBA	
		Custom Code		40-BF h ,44-BB h ,45-BA h ,45-BC h	
		Power Source	Voltage(D.C) UM size x pcs	3V UM-4 x 2 pcs	
		Total Keys		49 Keys	
		Keys	Power (Stand By)		Yes
			Display / (Status)		Yes
		Menu / Setup		Yes	
		Digital Menu		No	
		Input Select		Yes	
		TV/DVB-T		No	
		Guide/EPG		No	
		Picture Size		Yes	
		1		Yes	
		2		Yes	
		3		Yes	
		4		Yes	
		5		Yes	
		6		Yes	
		7		Yes	
		8		Yes	
		9		Yes	
		0		Yes	
		Sleep		Yes	
		Mute		Yes	
		Volume Up / Left		No	
		Volume Down / Right		No	
		Volume Up		Yes	
		Volume Down		Yes	
		CH Down		No	
		CH Up		No	
Menu		No			
Up		No			
Down		No			
Left		Yes			
Right		Yes			
Enter / CH List		Yes			
Exit / Cancel		Yes			
Freeze frame		No			
TV/Radio		No			
Subtitle		Yes			
Play		Yes			
Stop		Yes			
Eject		Yes			
TV / DVD		Yes			
Return		Yes			
DVD Menu		Yes			
Top Menu		Yes			
Repeat A-B		Yes			
Jump		Yes			
CH RTN/Zoom		Yes			

GENERAL SPECIFICATIONS

	TTEXT Keys	TEXT / TV	Yes				
		Reveal / Skip		No			
		Sub Page / Search+	Yes				
		Reveal / Search-	Yes				
		Reveal		No			
		Display Cancel		No			
		HOLD	Yes				
		Angle	Yes				
		Marker	Yes				
		F.T.B / Skip+	Yes				
		Skip-	Yes				
		Slow+ / Blue	Yes				
		Slow- / Red	Yes				
		Play Mode/Yellow	Yes				
		Green/Pause	Yes				
		Normal		No			
		F/T/B(Expand)		No			
		F/T/B(Expand) / Normal		No			
		Quick View		No			
		Sub Page / Quick View		No			
		Up/CH Up		No			
		Up / CH Up / Page Up	Yes				
		CH Up / Page Up		No			
		Down / CH Down		No			
		Down / CH Down / Page Down	Yes				
		CH Down / Page Down		No			
		Reset		No			
		Audio	Yes				
		Reset / Audio 1/2		No			
		G-12	Features	Power On Memory	Yes		
				Auto Shut Off	Yes		
				Just Clock Function		No	
				Game Position		No	
				DNR	Yes		
					3D		
				Comb Filter	Yes		
					3D		
				Auto Set Up (Fast installation)	Auto tuning (Analog tuner)	Yes	
					CH sort	Yes	
	ATS			Yes			
	Auto clock (Analog tuner)				No		
	Plug in start			Yes			
Picture Setting(TV)	Picture Preference			Yes			
	Brightness , Contrast , Color			Yes			
	Tint			Yes			
	Sharpness			Yes			
	DNR				No		
	Color Temperature			Yes			
	Blue Back			Yes			
	Backlight Control			Yes			
	Film Mode				No		
Picture Setting(PC)	BRIGHTNESS , CONTRAST			Yes			
	HOR POSITION , VER POSITION			Yes			
	PHASE , CLOCK			Yes			
	AUTO ADJUST				No		
	RED , GREEN , BLUE			Yes			
	Backlight			Yes			
	WXGA INPUT			Yes			
	WVGA INPUT				No		
Audio	Nicam			Yes			
	Tone Control (Bass/Treble/Balance)			Yes			
	Surround				No		
	BBE				No		
	SRS WOW (SRS 3D/Focus/Tru Bass)				No		
	Variable Audio Out				No		
Tuning	Auto Tuning			Yes			
	Manual Tuning			Yes			
	CH Allocation			Yes			
Lock (Analog)	Panel Lock				No		
	Channel Lock				No		
	Hotel Lock	Yes					
Screen Saver	Inversion		No				
	Full White		No				
	Screen Saver		No				
	Static Image		No				
Black Side Panel			No				
CH Label		Yes					

GENERAL SPECIFICATIONS

	T'Text		Yes	
		Text type	Fastext / Toptext	
		Text Language	English , French, Swedish, Hungarian Turkish, German, Portuguese, Spanish, Italian, Greek, Slovakian, Russian, Polish, Czech, Rumanian, Estonian, Lettish, Lithuanian, Ukrainian, Croatian, Slovenian, Latvian	
	Wide Mode (AUTO/4:3/FULL SCREEN/16:9/CINEMA/14:9)		Yes	
	Reset TV Setting		Yes	
	HD Zoom		No	
	Picture Scroll (Vertical Position)		Yes	
	PFC(Power Factor circuit)		No	
	Freeze frame		No	
	HD-Ready		Yes	
	Plug and Play		No	
	Scart Spec	Scart1	AV in	Yes
			AV out	Yes (Tuner/Monitor)
			S-Video in	No
			RGB in	Yes
		Scart2	AV in	No
			AV out	No
			S-Video in	No
			RGB in	No
	PC Monitor Input		Yes	
		VGA (640x480)	Yes (60Hz)	
		VGA (720x400)	No	
		WVGA (848x480)	No	
		SVGA (800x600)	Yes (60Hz)	
		XGA (1024x768)	Yes (60Hz)	
		WXGA (1280x768)	Yes (60Hz)	
		WXGA (1280x720)	Yes (60Hz)	
		WXGA (1360x768)	Yes (60Hz)	
		SXGA (1280x1024)	No	
	HDMI Input		Yes	
		VGA (640x480)	Yes (60Hz)	
		720x480i (4:3)	Yes (60Hz)	
		720x480i (16:9)	Yes (60Hz)	
		720x480p (4:3)	Yes (60Hz)	
		720x480p (16:9)	Yes (60Hz)	
		720x576i (4:3)	Yes (50Hz)	
		720x576i (16:9)	Yes (50Hz)	
		720x576p (4:3)	Yes (50Hz)	
		720x576p (16:9)	Yes (50Hz)	
		1280x720p	Yes (50/60Hz)	
		1920x1080i	Yes (50/60Hz)	
		Component Input		Yes
	720x480i (4:3)		Yes (60Hz)	
	720x480i (16:9)		Yes (60Hz)	
	720x480p (4:3)		Yes (60Hz)	
	720x480p (16:9)		Yes (60Hz)	
	720x576i (4:3)		Yes (50Hz)	
	720x576i (16:9)		Yes (50Hz)	
	720x576p (4:3)		Yes (50Hz)	
	720x576p (16:9)		Yes (50Hz)	
	1280x720p		Yes (50/60Hz)	
	1920x1080i		Yes (50/60Hz)	
	Wall Mount	Size W x H(mm)	Yes (100 x 100)	
		Screw Size	M4 x 10	
Features (DVD)	Tray Lock		Yes	
	WMA		No	
	JPEG		Yes	
	Video CD Playback		Yes	
	SVCD Playback		No	
	MP3 Playback		Yes	
	Divx Playback		Yes	
		DMF Support	No	
	Digital Out	(Dolby Digital)	Yes	
		(MPEG)	Yes	
		(PCM)	Yes	
		(DTS)	Yes	
	Down Mix Out	(Dolby Digital)	Yes	
		(DTS)	No	
3D Surround		No		
Closed Caption		No		
Screen Saver		No		
Audio DAC		192kHz / 24bit		

GENERAL SPECIFICATIONS

G-13	Accessories	Owner's Manual (Full)	Language	English	
		(Simplified)	w/Guarantee Card	Turkish, Greek, Polish, German, French, Dutch	
		Remote Control Unit			Yes
		Rod Antenna			No
			Poles		-
			Terminal		-
		Loop Antenna (W/ Antenna Change Plug)			No
			Terminal		-
		U/V Mixer			No
		DC Car Cord (Center+)			No
		Guarantee Card			No
		Warning Sheet			No
		Circuit Diagram			No
		Antenna Change Plug			No
		Service Facility List			No
		Important Safeguard			No
		Dew/AHC Caution Sheet			No
		Quick Set-up Sheet			Yes
		My Movie stream (Free DVD redemption voucher)			No
		Carbon Neutral Certificate			No
		Battery			Yes
			UM size x pcs		UM-4 x 2 pcs
			OEM Brand		No
		AC Adapter			No
		AC Cord (for AC Adapter)			No
		AC Cord			Yes
AV Cord (2Pin-1Pin)			No		
RF Cable			Yes		
HDMI-DVI Cable			No		
Helpline Sheet			No		
300 ohm to 75 ohm Antenna Adapter			No		
Sheet Information (GOST)			No		
G-14	Interface	Switch	Side	Power (Tact)	Yes
				System Select	No
				Main Power SW	No
				Channel Up/Menu Up/Play	Yes
				Channel Down/Menu Down/Stop	Yes
				Volume Up/Menu >	Yes
				Volume Down/Menu <	Yes
				Play	No (CH+ Alternative)
				Eject	Yes
				Skip+, Search+	No
				Skip-, Search-	No
				Stop	No (CH- Alternative)
				Input Select / Enter	Yes
				Menu	Yes
Indicator		Power/Stand-by/EPG Timer	Yes(GREEN / RED / --)		
		On Timer	No		
	Terminals	Side	CI Card Slot	No	
		Rear	Video Input 1	RCA x 1 (AV2)	
			Audio Input 1	RCA x 2(L/MONO, R) (AV2)	
			S- Input 1	Yes (AV2)	
			Video Input 2	No	
			Audio Input 2	No	
			S- Input 2	No	
			Video Output	No	
			Audio Output	No	
			Digital Audio Out (Coaxial)	Yes	
			Component In	Yes	
			Audio Input (Component In use)	RCA x 2(L/MONO, R)	
			Sub Woofer Output	No	
			Diversity	No	
			Ext Speaker	No	
			DC Jack 12V(Center +)	No	
			Other Terminal	Headphone	
			VHF/UHF Antenna Input	DIN Type	
			AC Inlet	Yes	
			Euro Scart (21Pin)	1Scart (AV1)	
			PC Monitor Input (D-Sub)	Yes	
			Audio Input	Mini Pin Jack(φ 3.5), STEREO	
	HDMI Input 1	Yes			
	Audio Input (HDMI/DVI In use)	PC Monitor Audio Input Alternative			
	HDMI Input 2	No			
	Audio Input (HDMI/DVI In use)	No			

GENERAL SPECIFICATIONS

G-15	Set Size	Approx. W x D x H (mm)	472 x 207 x 401
		w/o Stand,Handle Approx. W x D x H (mm)	472 x 67 x 364
G-16	Weight	Net Approx.	5.1kg (11.2 lbs)
		Net w/o Stand,Handle Approx.	4.4kg (9.7 lbs)
		Gross Approx.	6.8kg (15.0 lbs)
G-17	Carton	Master Carton	No
		Content	---- Sets
		Material	-- /--
		Dimensions W x D x H(mm)	-- x -- x --
		Description of Origin	No
		Gift Box	Yes
		Material	Double/Full Color
		Dimensions W x D x H(mm)	558 x 565 x 181
		W/Color Photo Label	No
		Description of Origin	Yes
		Drop Test	6 Surfaces
		Height (cm)	80
		Container Stuffing w/Pallet w/Wrapping	880 Sets/40' container Yes Yes
G-18	Material	Cabinet Cabinet Front	PC+ABS 94V0 NON-HALOGEN
		Cabinet Rear	PS 94V0 NON-DECABROM
		PCB Non-Halogen	No
		Eyelet	Yes
G-19	Environment	Environmental standard requirement	Green procurement of TOSHIBA
		Pb- Free	Phase3(PHASE3A)
		Measures for Whisker	Yes
		WEEE	Yes

GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size	18.95 inch / 481.4mmV	
			LCD Type	Color TFT LCD	
			Number of Pixels	1440(H) x 900(V)	
			View Range	80/80 degree	
				Left/Right Up/Down	80/80 degree
				Bright Dot	$n \leq 0$
				Zero Bright Dot Ratio	--
		Color System		PAL / SECAM	
		Speaker		2 Speaker	
			Position	Front	
			Size	1.5 x 2.8 inch	
			Impedance	8 ohm	
		Sound Output	MAX	1.5W + 1.5W	
			10%(Typical)	---	
		NTSC3.58+4.43 /PAL60Hz		Yes	
G-2	DVD System	Color System		NTSC, PAL	
		Disc		DVD, CD-DA, CD-	
		Disc Diameter		120 mm , 80 mm	
		Drive		DSM-2	
		Search speed	Fwd		4 step
				Actual	2-45 times (DVD/Video CD)
					4-40 times (CD)
			Rev		4 step
				Actual	2-45 times (DVD/Video CD)
					4-40 times (CD)
	Slow speed	Fwd		1/7 -1/2 times	
			Actual	--	
		Rev		1/7 -1/2 times	
			Actual	--	
G-3	Tuning System	Broadcasting System	Analog	U.K., I.R., CCIR, FRENCH System B/G, D/K, I/I, L	
			Digital	--	
		Tuner and Receive CH	System	1Tuner (Analog)	
		CH Coverage	Destination	UK, I.R., CCIR Hyper+France CATV	
			Analog	IreE2~E4, X~Z+2, S1~S10, E5~E12,S11~S41,E21~E69	
			Digital	--	
		Intermediate	Analog		BG / II / DK, L / L' (SECAM VL)
		Frequency	Picture(FP)		38.9 / 38.9 / 38.9 / 33.9MHz
			Sound(FS)		33.4 / 32.9 / 32.4 / 40.4MHz
			FP-FS		5.5 / 6.0 / 6.5 / 6.5MHz
			Digital		--
			Auto Tuning Method		ALL Band (Not C.C.I.R. CH Plan)
			Preset CH	Analog	99
		Digital	--		
	Stereo/Dual TV Sound		Nicam/A2 Dual		
	Tuner Sound Muting		Yes		
G-4	Signal	Video Signal	Input Level	1 V p-p/75 ohm	
			Output Level	1 V p-p/75 ohm	
			S/N Ratio (Weighted)	65dB	
			Horizontal Resolution at DVD Mode	400 Lines	
		RGB Signal	Output Level	--	
		Audio Signal	Input Level	-8.0dBm/50k ohm	
			Output Level	at DVD -12.0dBm/1k ohm (-20dBFs 0dBFs=2.0Vrms)	
				at TV -8 dBm/1k ohm (0dBm=0.775Vrms)	
			Digital Output Level	0.5 V p-p/75 ohm	
			S/N Ratio at DVD (Weighted)	85dB	
			Harmonic Distortion	0.02% (1KHz)	
			Frequency Response :	at DVD 4Hz - 22kHz	
				at Video CD 4Hz - 20kHz	
		at SVCD --			
		at CD 4Hz - 20kHz			
G-5	Power	Power Source	AC	220-240V AC 50Hz	
			DC	---	
		Power Consumption		at AC 55 W at AC 230 V 50 Hz	
				at DC --	
		Stand by (at AC)	w/ EPG Timer	--	
	w/o EPG Timer	1 W at 230V 50Hz			
	Per Year	-- kWh/Year			
	Protector	Power Fuse	Yes		
G-6	Regulation	Safety		CE(EN60065:2002)	
		Radiation		CE	
		X-Radiation		---	

GENERAL SPECIFICATIONS

G-7	Temperature	Operation	+5°C ~ +40°C	
		Storage	-20°C ~ +60°C	
		Space Around Unit	100 mm(4inch)	
G-8	Operating Humidity		Less than 80% RH	
G-9	OSD Language	(TV)	English, Spanish, German, French, Italian, Swedish, Dutch, Russian, Portuguese, Turkish, Greek, Finnish, Polish, Danish, Norwegian	
		(DVD)	English, Spanish, German, French, Italian	
G-10	Clock and Timer	Sleep Timer	Max Time Step 120 Min 10 Min	
		On/Off Timer	Program(On Timer / Off Timer) -- Program	
		Wake Up Timer	No	
		Timer Back-up (at Power Off Mode)	more than -- Min Sec	
G-11	Remote Control	Unit	RC-PT	
		Glow in Dark Remocon	No	
		Remocon Format	TOSHIBA	
		Format	TOSHIBA	
		Custom Code	40-BF h ,44-BB h ,45-BA h ,45-BC h	
		Power Source	Voltage(D.C) UM size x pcs 3V UM-4 x 2 pcs	
		Total Keys	49 Keys	
		Keys	Power (Stand By)	Yes
			Display / (Status)	Yes
			Menu / Setup	Yes
			Digital Menu	No
			Input Select	Yes
			TV/DVB-T	No
			Guide/EPG	No
			Picture Size	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Sleep	Yes
			Mute	Yes
			Volume Up / Left	No
			Volume Down / Right	No
			Volume Up	Yes
			Volume Down	Yes
			CH Down	No
			CH Up	No
			Menu	No
			Up	No
			Down	No
			Left	Yes
			Right	Yes
			Enter / CH List	Yes
			Exit / Cancel	Yes
	Freeze frame	No		
	TV/Radio	No		
	Subtitle	Yes		
	Play	Yes		
	Stop	Yes		
	Eject	Yes		
	TV / DVD	Yes		
	Return	Yes		
	DVD Menu	Yes		
	Top Menu	Yes		
	Repeat A-B	Yes		
	Jump	Yes		
	CH RTN/Zoom	Yes		

GENERAL SPECIFICATIONS

	TTEXT Keys	TEXT / TV	Yes		
		Reveal / Skip		No	
		Sub Page / Search+	Yes		
		Reveal / Search-	Yes		
		Reveal		No	
		Display Cancel		No	
		HOLD	Yes		
		Angle	Yes		
		Marker	Yes		
		F.T.B / Skip+	Yes		
		Skip-	Yes		
		Slow+ / Blue	Yes		
		Slow- / Red	Yes		
		Play Mode/Yellow	Yes		
		Green/Pause	Yes		
		Normal		No	
		F/T/B(Expand)		No	
		F/T/B(Expand) / Normal		No	
		Quick View		No	
		Sub Page / Quick View		No	
		Up/CH Up		No	
		Up / CH Up / Page Up	Yes		
		CH Up / Page Up		No	
		Down / CH Down		No	
		Down / CH Down / Page Down	Yes		
		CH Down / Page Down		No	
		Reset		No	
		Audio	Yes		
Reset / Audio 1/2		No			
G-12	Features	Power On Memory	Yes		
		Auto Shut Off	Yes		
		Just Clock Function		No	
		Game Position		No	
		DNR	Yes		
			3D		
		Comb Filter	Yes		
			3D		
		Auto Set Up (Fast installation)	Auto tuning (Analog tuner)	Yes	
			CH sort	Yes	
			ATS	Yes	
			Auto clock (Analog tuner)		No
			Plug in start	Yes	
		Picture Setting(TV)	Picture Preference	Yes	
			Brightness , Contrast , Color	Yes	
			Tint	Yes	
			Sharpness	Yes	
			DNR		No
			Color Temperature	Yes	
			Blue Back	Yes	
			Backlight Control	Yes	
			Film Mode		No
		Picture Setting(PC)	BRIGHTNESS , CONTRAST	Yes	
			HOR POSITION , VER POSITION	Yes	
			PHASE , CLOCK	Yes	
			AUTO ADJUST		No
			RED , GREEN , BLUE	Yes	
			Backlight	Yes	
			WXGA INPUT	Yes	
			WVGA INPUT		No
		Audio	Nicam	Yes	
			Tone Control (Bass/Treble/Balance)	Yes	
			Surround		No
			BBE		No
			SRS WOW (SRS 3D/Focus/Tru Bass)		No
			Variable Audio Out		No
		Tuning	Auto Tuning	Yes	
			Manual Tuning	Yes	
			CH Allocation	Yes	
		Lock (Analog)	Panel Lock		No
			Channel Lock		No
			Hotel Lock	Yes	

GENERAL SPECIFICATIONS

Screen Saver	Inversion	No	
	Full White	No	
	Screen Saver	No	
	Static Image	No	
Black Side Panel		No	
CH Label		Yes	
T'Text		Yes	
	Text type	Fasttext / Toptext	
	Text Language	English , French, Swedish, Hungarian Turkish, German, Portuguese, Spanish, Italian, Greek, Slovakian, Russian, Polish, Czech, Rumanian, Estonian, Lettish, Lithuanian, Ukrainian, Croatian, Slovenian, Latvian	
Wide Mode (AUTO/4:3/FULL SCREEN/16:9/CINEMA/14:9)		Yes	
Reset TV Setting		Yes	
HD Zoom		No	
Picture Scroll (Vertical Position)		Yes	
PFC(Power Factor circuit)		No	
Freeze frame		No	
HD-Ready		Yes	
Plug and Play		No	
Scart Spec	Scart1	AV in	Yes
		AV out	Yes (Tuner/Monitor)
S-Video in		No	
RGB in		Yes	
	Scart2	AV in	No
		AV out	No
		S-Video in	No
		RGB in	No
PC Monitor Input		Yes	
	VGA (640x480)	Yes (60Hz)	
	VGA (720x400)	No	
	WVGA (848x480)	No	
	SVGA (800x600)	Yes (60Hz)	
	XGA (1024x768)	Yes (60Hz)	
	WXGA (1280x768)	Yes (60Hz)	
	WXGA (1280x720)	Yes (60Hz)	
	WXGA (1360x768)	Yes (60Hz)	
SXGA (1280x1024)	No		
HDMI Input		Yes	
	VGA (640x480)	Yes (60Hz)	
	720x480i (4:3)	Yes (60Hz)	
	720x480i (16:9)	Yes (60Hz)	
	720x480p (4:3)	Yes (60Hz)	
	720x480p (16:9)	Yes (60Hz)	
	720x576i (4:3)	Yes (50Hz)	
	720x576i (16:9)	Yes (50Hz)	
	720x576p (4:3)	Yes (50Hz)	
	720x576p (16:9)	Yes (50Hz)	
	1280x720p	Yes (50/60Hz)	
	1920x1080i	Yes (50/60Hz)	
	Component Input		Yes
720x480i (4:3)		Yes (60Hz)	
720x480i (16:9)		Yes (60Hz)	
720x480p (4:3)		Yes (60Hz)	
720x480p (16:9)		Yes (60Hz)	
720x576i (4:3)		Yes (50Hz)	
720x576i (16:9)		Yes (50Hz)	
720x576p (4:3)		Yes (50Hz)	
720x576p (16:9)		Yes (50Hz)	
1280x720p		Yes (50/60Hz)	
1920x1080i		Yes (50/60Hz)	
Wall Mount		Size W x H(mm)	Yes (100 x 100)
		Screw Size	M4 x 10

GENERAL SPECIFICATIONS

	Features (DVD)	Tray Lock	Yes		
		WMA		No	
		JPEG	Yes		
		Video CD Playback	Yes		
		SVCD Playback		No	
		MP3 Playback	Yes		
		Divx Playback	Yes		
			DMF Support		No
		Digital Out	(Dolby Digital)	Yes	
			(MPEG)	Yes	
			(PCM)	Yes	
			(DTS)	Yes	
		Down Mix Out	(Dolby Digital)	Yes	
			(DTS)		No
		3D Surround		No	
		Closed Caption		No	
Screen Saver		No			
Audio DAC		192kHz / 24bit			
G-13	Accessories	Owner's Manual (Full)	Language	English	
		(Simplified)		Turkish, Greek, Polish, German, French, Dutch	
			w/Guarantee Card	No	
		Remote Control Unit		Yes	
		Rod Antenna			No
			Poles	-	
			Terminal	-	
		Loop Antenna (W/ Antenna Change Plug)			No
			Terminal	-	
		U/V Mixer		No	
		DC Car Cord (Center+)		No	
		Guarantee Card		No	
		Warning Sheet		No	
		Circuit Diagram		No	
		Antenna Change Plug		No	
		Service Facility List		No	
		Important Safeguard		No	
		Dew/AHC Caution Sheet		No	
		Quick Set-up Sheet		Yes	
		My Movie stream (Free DVD redemption voucher)		No	
		Carbon Neutral Certificate		No	
		Battery		Yes	
			UM size x pcs	UM-4 x 2 pcs	
			OEM Brand	No	
		AC Adapter		No	
		AC Cord (for AC Adapter)		No	
		AC Cord		Yes	
		AV Cord (2Pin-1Pin)		No	
		RF Cable		Yes	
		HDMI-DVI Cable		No	
		Helpline Sheet		No	
		300 ohm to 75 ohm Antenna Adapter		No	
Sheet Information (GOST)		No			
G-14	Interface	Switch	Side	Power (Tact)	Yes
				System Select	No
				Main Power SW	No
				Channel Up/Menu Up/Play	Yes
				Channel Down/Menu Down/Stop	Yes
				Volume Up/Menu >	Yes
				Volume Down/Menu <	Yes
				Play	No (CH+ Alternative)
				Eject	Yes
				Skip+, Search+	No
				Skip-, Search-	No
				Stop	No (CH- Alternative)
				Input Select / Enter	Yes
				Menu	Yes
		Indicator		Power/Stand-by/EPG Timer	Yes(GREEN / RED / --)
				On Timer	No

GENERAL SPECIFICATIONS

	Terminals	Side	CI Card Slot	No
		Rear	Video Input 1	RCA x 1 (AV2)
			Audio Input 1	RCA x 2(L/MONO, R) (AV2)
			S- Input 1	Yes (AV2)
			Video Input 2	No
			Audio Input 2	No
			S- Input 2	No
			Video Output	No
			Audio Output	No
			Digital Audio Out (Coaxial)	Yes
			Component In	Yes
			Audio Input (Component In use)	RCA x 2(L/MONO, R)
			Sub Woofer Output	No
			Diversity	No
			Ext Speaker	No
			DC Jack 12V(Center +)	No
			Other Terminal	Headphone
			VHF/UHF Antenna Input	DIN Type
			AC Inlet	Yes
			Euro Scart (21Pin)	1Scart (AV1)
			PC Monitor Input (D-Sub)	Yes
			Audio Input	Mini Pin Jack(3.5 , STEREO)
			HDMI Input 1	Yes
			Audio Input (HDMI/DVI In use)	PC Monitor Audio Input Alternative
			HDMI Input 2	No
			Audio Input (HDMI/DVI In use)	No
G-15	Set Size		Approx. W x D x H (mm)	472 x 207 x 401
			w/o Stand,Handle Approx. W x D x H (mm)	472 x 67 x 364
G-16	Weight		Net Approx.	5.1kg (11.2 lbs)
			Net w/o Stand,Handle Approx.	4.4kg (9.7 lbs)
			Gross Approx.	6.8kg (15.0 lbs)
G-17	Carton	Master Carton	Content	No Sets
			Material	-- /--
			Dimensions W x D x H(mm)	-- x -- x --
			Description of Origin	No
		Gift Box		Yes
			Material	Double/Full Color
			Dimensions W x D x H(mm)	558 x 565 x 181
			W/Color Photo Label	No
			Description of Origin	Yes
		Drop Test		6 Surfaces
			Height (cm)	80
		Container Stuffing		1088 Sets/40' container
		w/Pallet		Yes
		w/Wrapping		Yes
G-18	Material	Cabinet	Cabinet Front	PC+ABS 94V0 NON-HALOGEN
			Cabinet Rear	PS 94V0 NON-DECABROM
		PCB	Non-Halogen	No
			Eyelet	Yes
G-19	Environment	Environmental standard requirement		Green procurement of TOSHIBA
		Pb- Free		Phase3(PHASE3A)
			Measures for Whisker	Yes
		WEEE		Yes

DISASSEMBLY INSTRUCTIONS

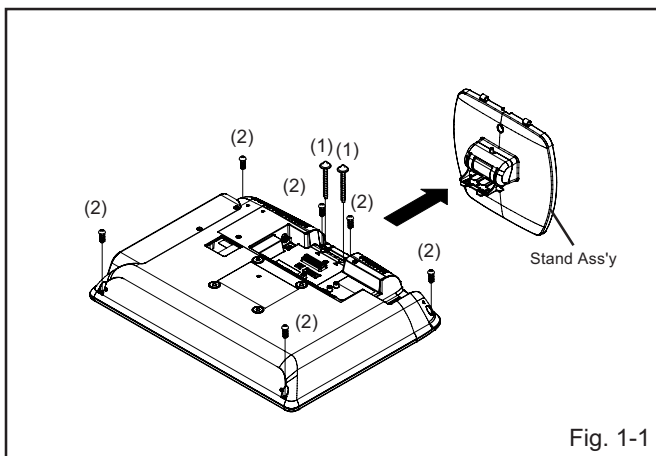
1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

CAUTION:

- Never lift the LCD Panel more than 90°, the LCD Panel or the connector will be damaged.
- **High voltages exist in the set (especially the back-light) which can cause injury or death.** Please disconnect the AC power during repair to prevent serious shock or death.

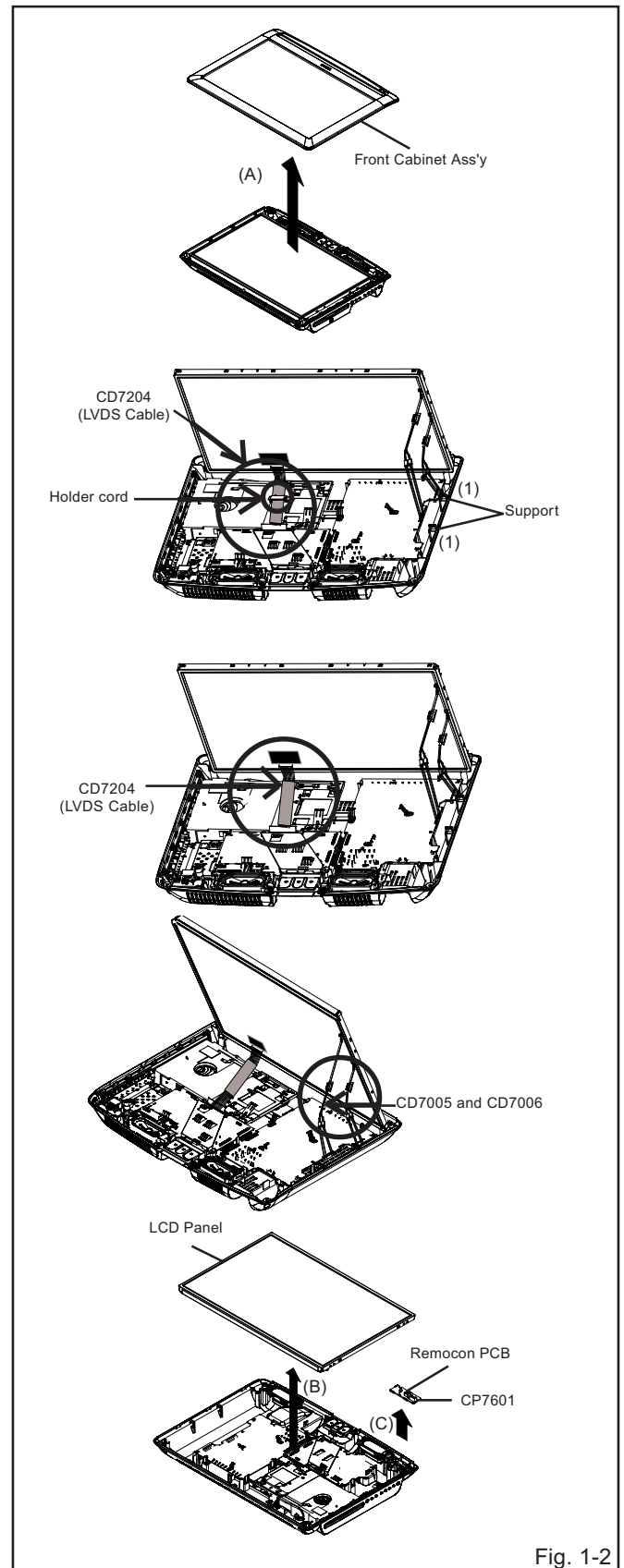
1-1: STAND ASS'Y (Refer to Fig. 1-1)

1. Remove the 2 screws (1).
2. Remove the Stand Ass'y in the direction of arrow.
3. Remove the 6 screws (2).



1-2: FRONT CABINET ASS'Y, LCD PANEL AND REMOCON PCB (Refer to Fig. 1-2)

1. Remove the Front Cabinet Ass'y in the direction of arrow (A).
2. Unlock the 2 supports (1).
3. Lift the LCD Panel within to angle 45°, then remove the Holder cord.
4. Lift the LCD Panel within to angle 85°.
5. Disconnect the following connectors: **(CD7005, CD7006 and CD7204)**.
6. Remove the LCD PANEL in the direction of arrow (B).
7. Disconnect the following connector: **(CP7601)**.
8. Remove the Remocon PCB in the direction of arrow (C).



DISASSEMBLY INSTRUCTIONS

1-3: POWER PCB (Refer to Fig. 1-3)

1. Remove the Holder PCB in the direction of arrow (A).
2. Disconnect the following connector:
(CD301, CP501 and CP8101).
3. Remove the 7 screws (1).
4. Remove the Power PCB in the direction of arrow (B).

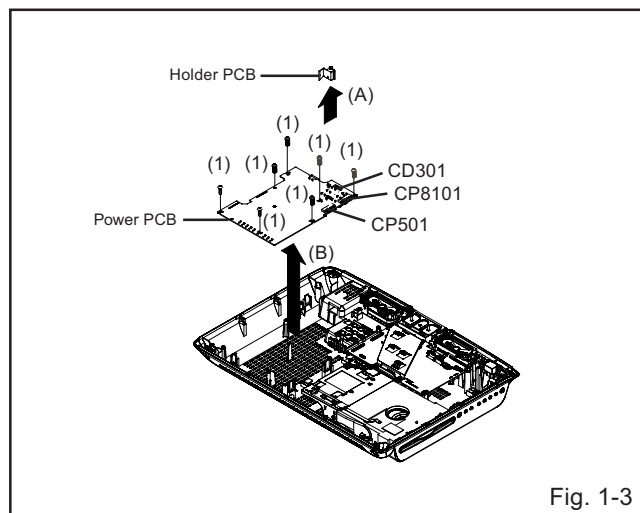


Fig. 1-3

1-4: MAIN PCB, TUNER PCB AND OPERATION PCB (Refer to Fig. 1-4)

1. Remove the screw (1).
2. Remove the Speaker-R Ass'y in the direction of arrow (A).
3. Disconnect the following connector:
(CP2201, CP5803 and CP6501).
4. Remove the screw (2).
5. Remove the TUNER PCB in the direction of arrow (B).
6. Remove the screw (3).
7. Remove the Plate Pcb in the direction of arrow (C).
8. Remove the 5 screws (4).
9. Remove the Spring Earth 1 in the direction of arrow (D).
10. Remove the MAIN PCB in the direction of arrow (E).
11. Remove the 3 screws (5).
12. Remove the Operation PCB in the direction of arrow (F).

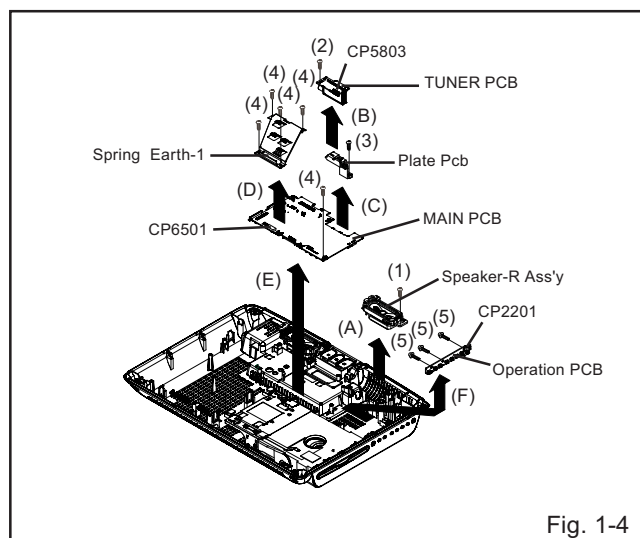


Fig. 1-4

1-5: DVD DECK (Refer to Fig. 1-5)

1. Short circuit the position shown in Fig. 1-5 using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Remove the 5 screws (1).
3. Remove the DVD Deck in the direction of arrow (A).
4. Disconnect the following connectors:
(CP2301, CP2302 and CP2303).
5. Remove the 2 screws (2).
6. Remove the Angle Mpeg in the direction of arrow (B).
7. Remove the 4 screws (3).
8. Remove the DVD MT PCB in the direction of arrow (C).

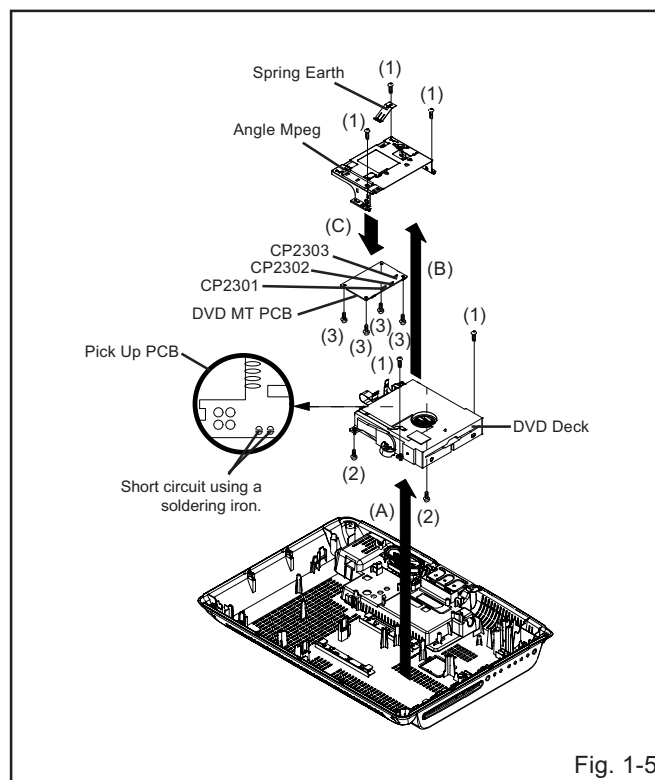


Fig. 1-5

NOTE

1. Before your operation, please read "PREPARATION OF SERVICING"
2. Use the Lead Free solder.
3. Manual soldering conditions
 - Soldering temperature: $320 \pm 20^{\circ}\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
4. When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to keep the Flux smoke away from it.
5. When installing the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD MT PCB connector.

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DVD DECK PARTS

NOTE

1. Disassemble only the DVD DECK PARTS parts listed here. Minute adjustments are needed if the disassembly is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

2-1: TRAVERSE ASS'Y (Refer to Fig. 2-1-A)

1. Remove the 3 screws (1).
2. Unlock the 2 supports (2).
3. Remove the Insulator (R) from the Loader Sub Ass'y.
4. Remove the Traverse Ass'y.

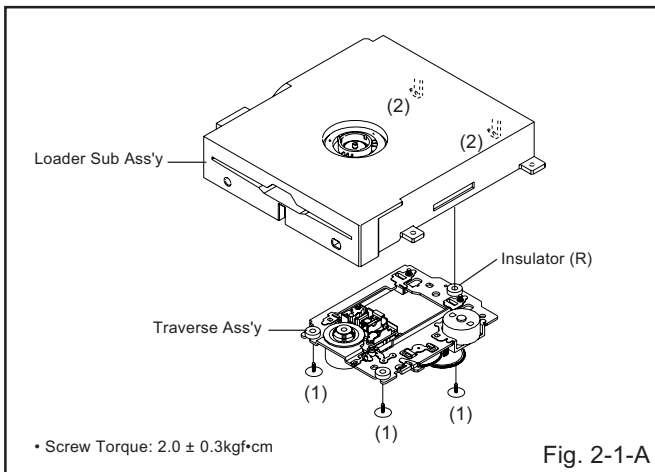


Fig. 2-1-A

NOTE

1. In case of the Traverse Ass'y installation, hook the wire on the Loader Ass'y as shown Fig. 2-1-B to Fig. 2-1-C.

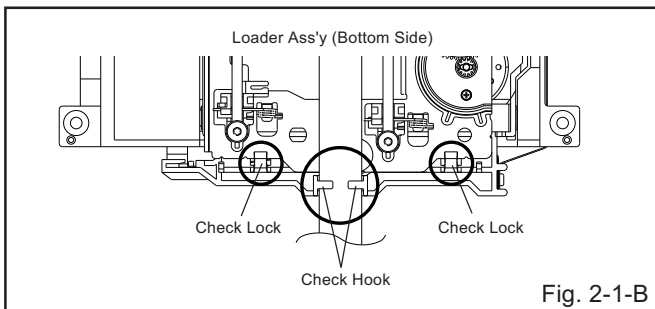


Fig. 2-1-B

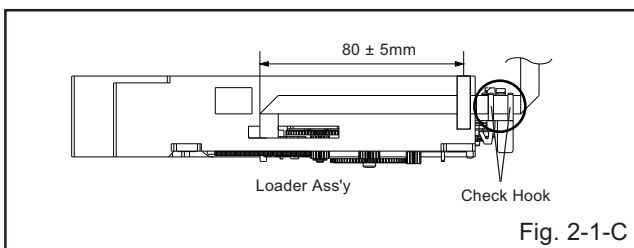


Fig. 2-1-C

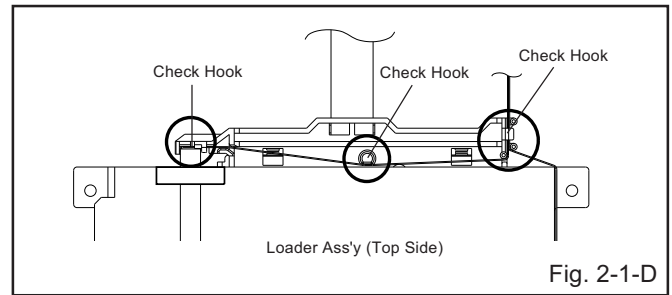


Fig. 2-1-D

2-2: SWITCH PCB ASS'Y/GEAR MIDDLE/GEAR FEED/RACK FEED ASS'Y/FEED MOTOR (Refer to Fig. 2-2-A)

1. Remove the Insulator (F).
2. Remove the Insulator (R).
3. Unlock the support (1).
4. Remove the Gear Middle.
5. Remove the screw (2).
6. Remove the Rack Feed Ass'y.
7. Remove the screw (3).
8. Remove the Switch PCB Ass'y.
9. Remove the screw (4).
10. Remove the Gear Feed.
11. Remove the 2 screws (5).
12. Remove the Feed Motor.
13. Remove the Gear Motor.

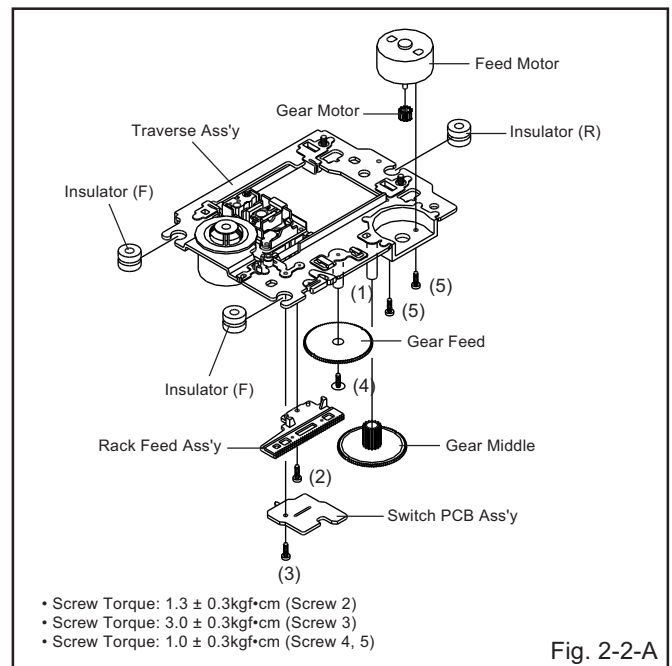
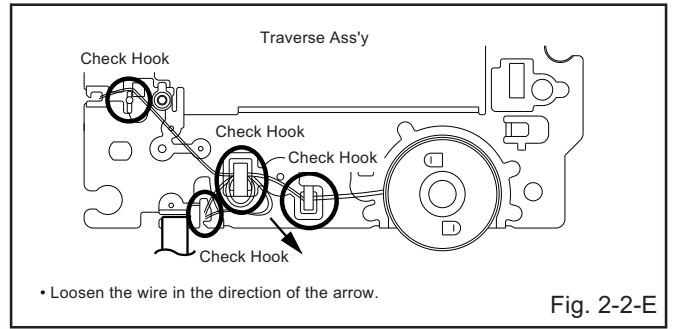
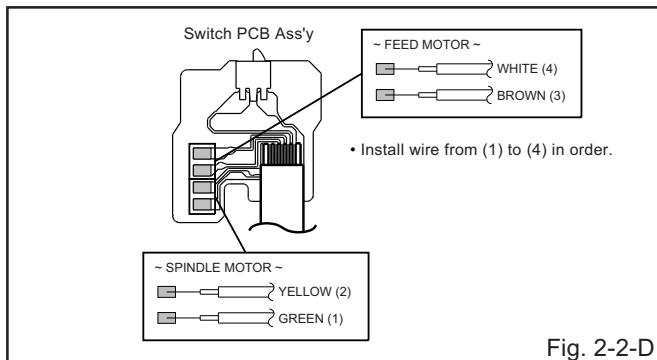
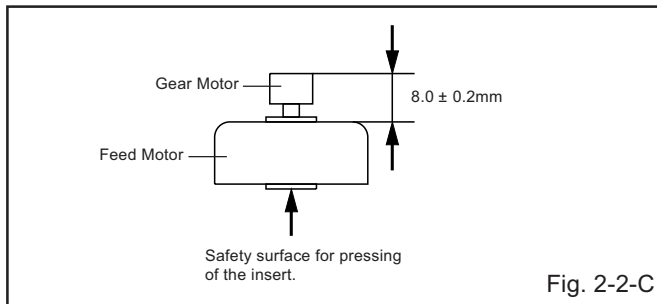
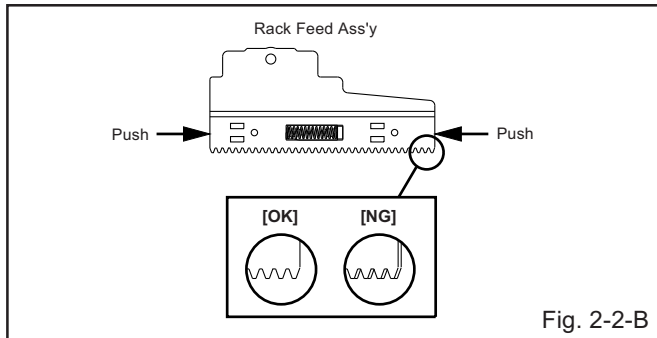


Fig. 2-2-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. When installing the Rack Feed Ass'y, push both ends to align the teeth as shown Fig. 2-2-B. Then install it.
2. In case of the Gear Motor installation, check if the value of the Fig. 2-2-C is correct.
3. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 2-2-D.
Manual soldering conditions
 - Soldering temperature: $320 \pm 20^{\circ}\text{C}$
 - Soldering time: Within 3 seconds
 - Soldering combination: Sn-3.0Ag-0.5Cu
4. After the assembly of the Traverse Ass'y, hook the wire on the Traverse Ass'y as shown Fig. 2-2-E.

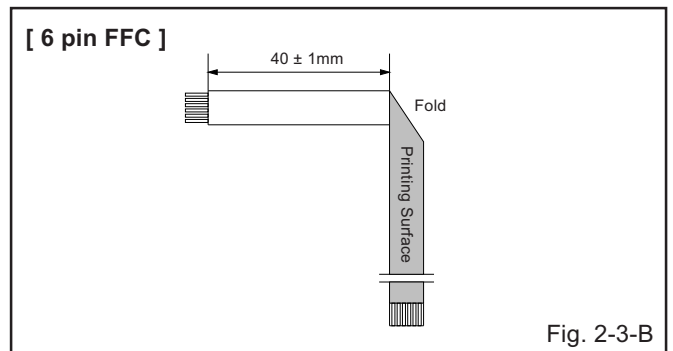
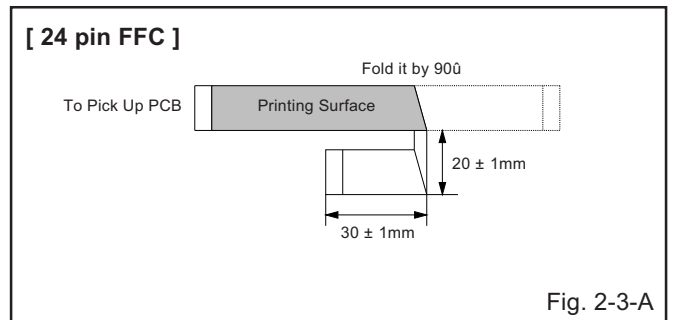


2-3: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 2-3-A to Fig. 2-3-B.

NOTE

1. Do not make the folding lines except the specified positions for the FFC.



DISASSEMBLY INSTRUCTIONS

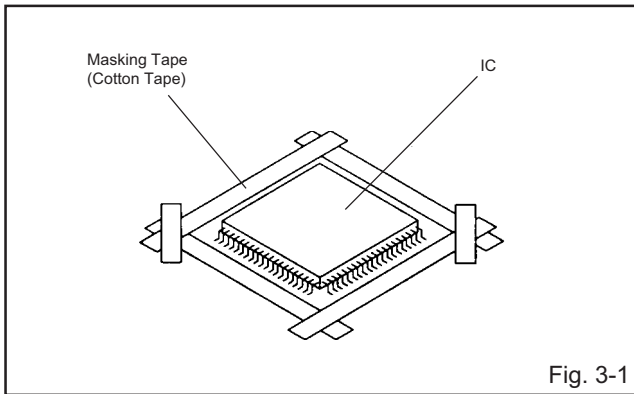
3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 3-1.)

NOTE

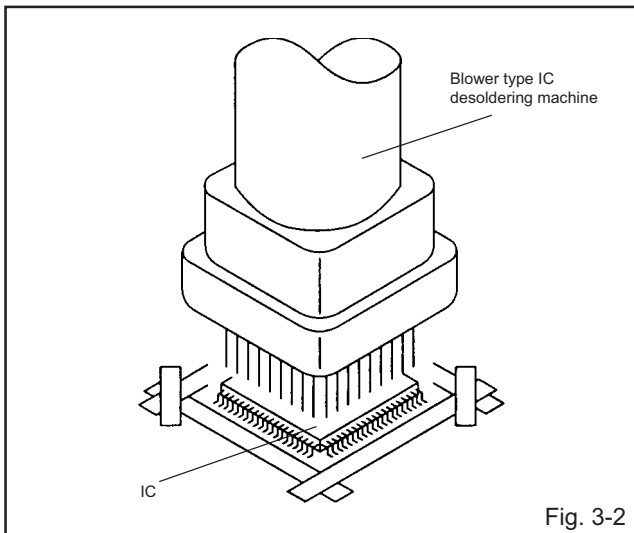
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 3-2.)

NOTE

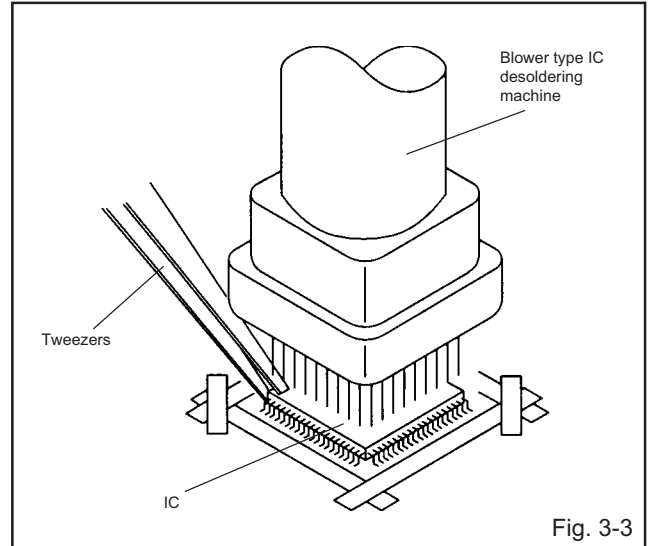
Do not rotate or move the IC back and forth, until IC can move back and forth easily after desoldering the leads completely.



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 3-3.)

NOTE

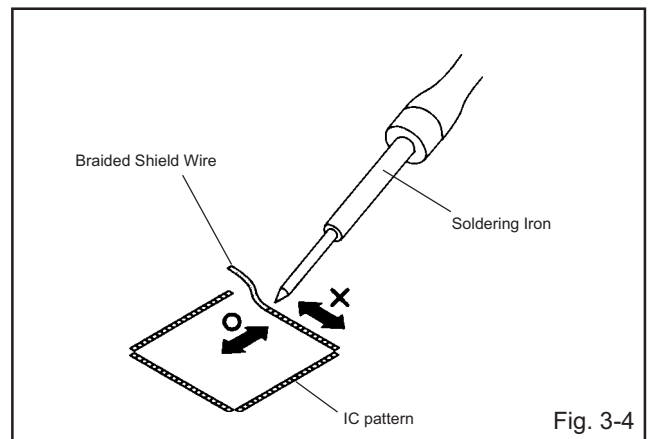
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 3-4.)

NOTE

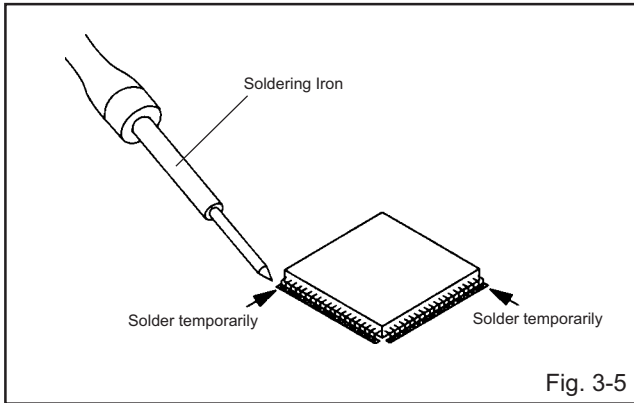
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



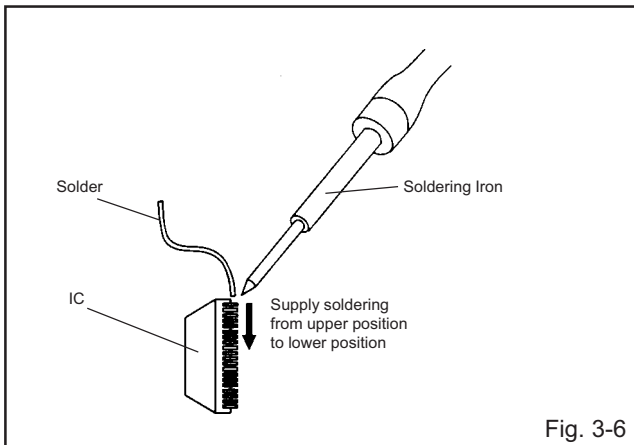
DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. (Refer to Fig. 3-5.)



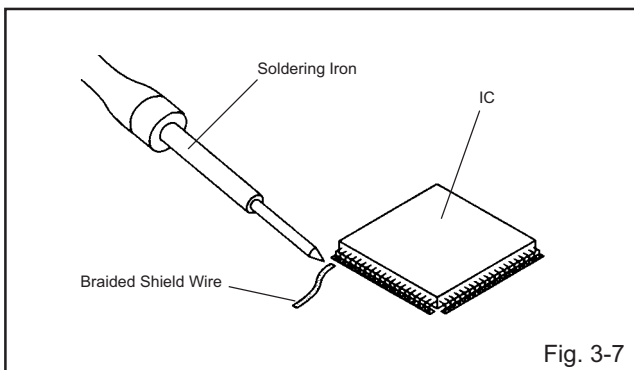
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 3-6.)



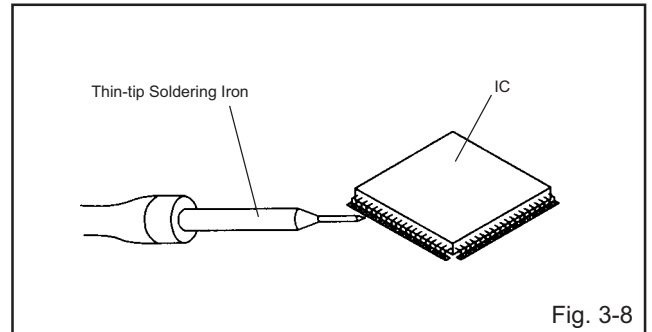
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 3-7.)

NOTE

Do not absorb the solder to excess.



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. (Refer to Fig. 3-8.)



5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass. Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

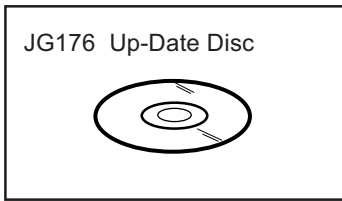
This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
TV mode	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
TV mode	VOL. DOWN (Minimum)	2	2 sec.	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
DVD mode (No disc)	VOL. DOWN (Minimum)	4	2 sec.	Initialization of factory DVD data.
DVD mode (No disc)	VOL. DOWN (Minimum)	5	2 sec.	DVD Write mode. Refer to the "RE-WRITE FOR DVD FIRMWARE".
TV mode	VOL. DOWN (Minimum)	6	2 sec.	POWER ON total hours are displayed on the screen. Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
ALL mode	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
DVD mode (No disc)	STOP	1	2 sec.	Region setting. Refer to the "RE-WRITE FOR DVD FIRMWARE".
DVD mode (No disc)	STOP	7	2 sec.	Releasing of PARENTAL LOCK. Refer to the "PARENTAL CONTROL - RATING LEVEL".

Method	
Press the following remocon keys continuously. SETUP → SUBTITLE → 3 → AUDIO SELECT → 0	The disk cannot be taken out. Refer to the "TRAY LOCK".

SERVICING FIXTURES AND TOOLS



Ref. No.	Part No.	Parts Name	Remarks
JG176	APJG176145	Up-Date Disc	Up-Date of the Firmware

RE-WRITE FOR DVD FIRMWARE

1. Turn on the power, and set the DVD mode.
2. Confirm that the "No Disc" will be appeared on the screen.
3. Press both VOL. DOWN button on the set and Channel button (5) on the remote control for more than 2 seconds.
4. Press VOL. UP/DOWN button on the unit to check if all the keys on the unit do not function.
NOTE: To check if DVD Write mode is set.
When inserting Up-Date Disc at Non DVD Write mode, the read error will happen.

5. Insert the Up-Date Disc. (Refer to **SERVICING FIXTURE AND TOOLS**)
6. Automatic read will start and "Firmware upgrade Please Wait" will be displayed on the screen. At this time, the horizontal noise lines may appear. But no problem.
NOTE: Do not turn off the unit on the way or operate the keys on the unit and remocon.
Up-Date error will happen and can not be done with the Up-Date of Up-Date Disc.

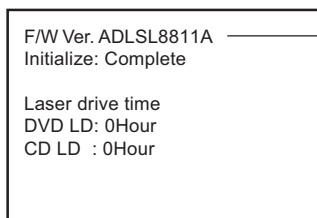
7. After the Up-Date, Logo screen will appear.
8. Unplug the AC cord, then plug it in.

After the write, set to the initializing of shipping.

9. Turn on the power, and set the DVD mode.
10. Press both VOL. DOWN button on the set and Channel button (4) on the remote control for more than 2 seconds. The "INITIALIZE 5 ---> COMPLETE" will appear on the screen.
11. Then unplug the AC cord, and plug it in.

CHECK FOR THE FIRMWARE VERSION

12. Turn on the power, and set the DVD mode.
13. Press both Channel button (1) on the remote control and the STOP button on the set for more than 2 seconds. Firmware version will be displayed on the top left of the screen.



When the changed version displays, the Re-write will be completed.

A D L S L 8 8 1 1 A
 Fixed Released times on the same date
 Release date (Example: 2008.8.11)

A = October
 B = November
 C = December

14. Turn off the power

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS AND MICON VERSION

Initial total of MEMORY IC, POWER ON total hours and MICON VERSION can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(2)** on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, turn off the power.

NOTE: The each item value might be different according to each set.

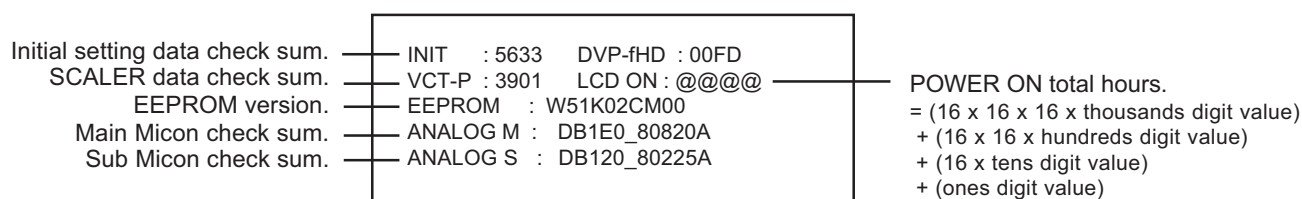


FIG. 1

CONFIRMATION OF INITIAL DATA

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to INITIAL SETTING TABLE (Attached "INITIAL DATA").

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 2.

NOTE: No need to set data other position than 0D00~0E3F and 1000~1003, 1322~1413, 152E~158B, 1704~1825, 1828~18FF, 1900~7FFF.

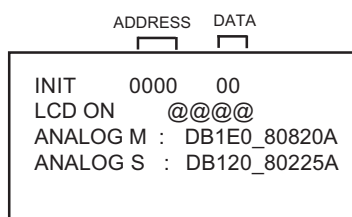


FIG. 2

4. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press LEFT/RIGHT button to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
7. Pressing LEFT/RIGHT button will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 6 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

10. Turn on the POWER.
 11. Set the VOLUME to minimum.
 12. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
 13. After the finishing of the initializing of shipping, the unit will turn off automatically.
- The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

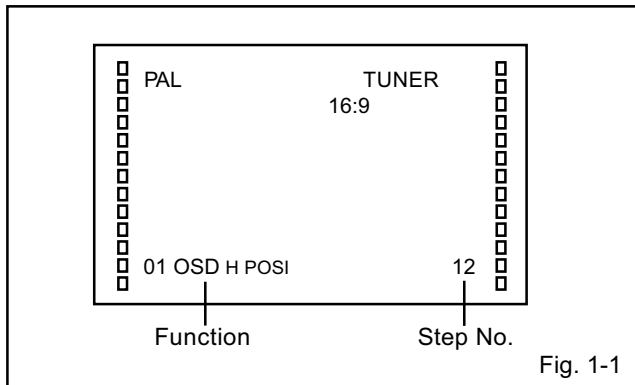
- Use an isolation transformer when performing any service on this chassis.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button (9) on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in Fig. 1-1.



3. Use the CH. UP/DOWN button or Channel button (0-9) on the remote control to select the options shown in Fig. 1-2.
4. Press the MENU SET UP button on the remote control to end the adjustments.
5. To display the adjustment screen for TUNER, AV, COMPONENT, HDMI, PC and DVD mode, press the INPUT button on the remote control.
6. Press the VOL.DOWN button on the set and the channel (9) on the remote control for more than 2 seconds.

NO.	FUNCTION	NO.	FUNCTION
01	OSD H POSI	24	V POSI
02	OSD V POSI	25	V POSI MAX
03	R DRIVE(N)	26	V POSI MIN
04	R CUTOFF(N)	27	BACKLIGHT CENTER
05	G DRIVE(N)	28	BACKLIGHT MAX
06	G CUTOFF(N)	29	BACKLIGHT MIN
07	B DRIVE(N)	30	BRIGHT CENTER
08	B CUTOFF(N)	31	BRIGHT MAX
09	R DRIVE(C)	32	BRIGHT MIN
10	R CUTOFF(C)	33	TINT CENTER
11	G DRIVE(C)	34	CONTRAST CENTER
12	G CUTOFF(C)	35	CONTRAST MAX
13	B DRIVE(C)	36	CONTRAST MIN
14	B CUTOFF(C)	37	CONTRAST 50
15	R DRIVE(W)	38	COLOR CENTER
16	R CUTOFF(W)	39	COLOR MAX
17	G DRIVE(W)	40	COLOR MIN
18	G CUTOFF(W)	41	TEXT H POSI
19	B DRIVE(W)	42	TEXT V POSI
20	B CUTOFF(W)	43	FLICKER ADJ
21	H POSI		
22	H POSI MAX		
23	H POSI MIN		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the INPUT button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of Fig. 1-1 and press the channel button (03) on the remote control to select "R DRIVE(N)".
6. Press the PAGE UP/DOWN button on the remote control to select the "R DRIVE(N)", "R CUTOFF(N)", "B DRIVE(N)", "B CUTOFF(N)", "R DRIVE(C)", "R CUTOFF(C)", "B DRIVE(C)", "B CUTOFF(C)", "R DRIVE(W)", "R CUTOFF(W)", "B DRIVE(W)" or "B CUTOFF(W)".
7. Adjust the LEFT/RIGHT button on the remote control to whiten the R DRIVE(N), R CUTOFF(N), B DRIVE(N), B CUTOFF(N), R DRIVE(C), R CUTOFF(C), B DRIVE(C), B CUTOFF(C), R DRIVE(W), R CUTOFF(W), B DRIVE(W) and B CUTOFF(W) at each step tone sections equally.
8. Perform the above adjustments 6 and 7 until the white achieved.

ELECTRICAL ADJUSTMENTS

2-2: CONTRAST MAX

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig.1-1** and press the channel button (**35**) on the remote control to select "CONTRAST MAX".
4. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "53".
5. Check if the picture is normal.
6. Receive the monoscope pattern. (VIDEO Input)
7. Press the INPUT button on the remote control to set to the AV1(RGB) mode.
8. Using the remote control, set the brightness and contrast to normal position.
9. Activate the adjustment mode display of **Fig.1-1** and press the channel button (**35**) on the remote control to select "CONTRAST MAX".
10. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "51".
11. Check if the picture is normal.
12. Receive the monoscope pattern. (VIDEO Input)
13. Press the INPUT button on the remote control to set to the AV1(CVBS) mode.
14. Using the remote control, set the brightness and contrast to normal position. Then perform the above adjustments 9~11.
15. Receive the monoscope pattern. (VIDEO Input)
16. Press the INPUT button on the remote control to set to the AV2(CVBS) mode.
17. Using the remote control, set the brightness and contrast to normal position. Then perform the above adjustments 9~11.
18. Receive the monoscope pattern. (S-VIDEO Input)
19. Press the INPUT button on the remote control to set to the AV2(S-VIDEO) mode.
20. Using the remote control, set the brightness and contrast to normal position. Then perform the above adjustments 9~11.

ELECTRICAL ADJUSTMENTS

2-4: Confirmation of Fixed Value (Step No.)

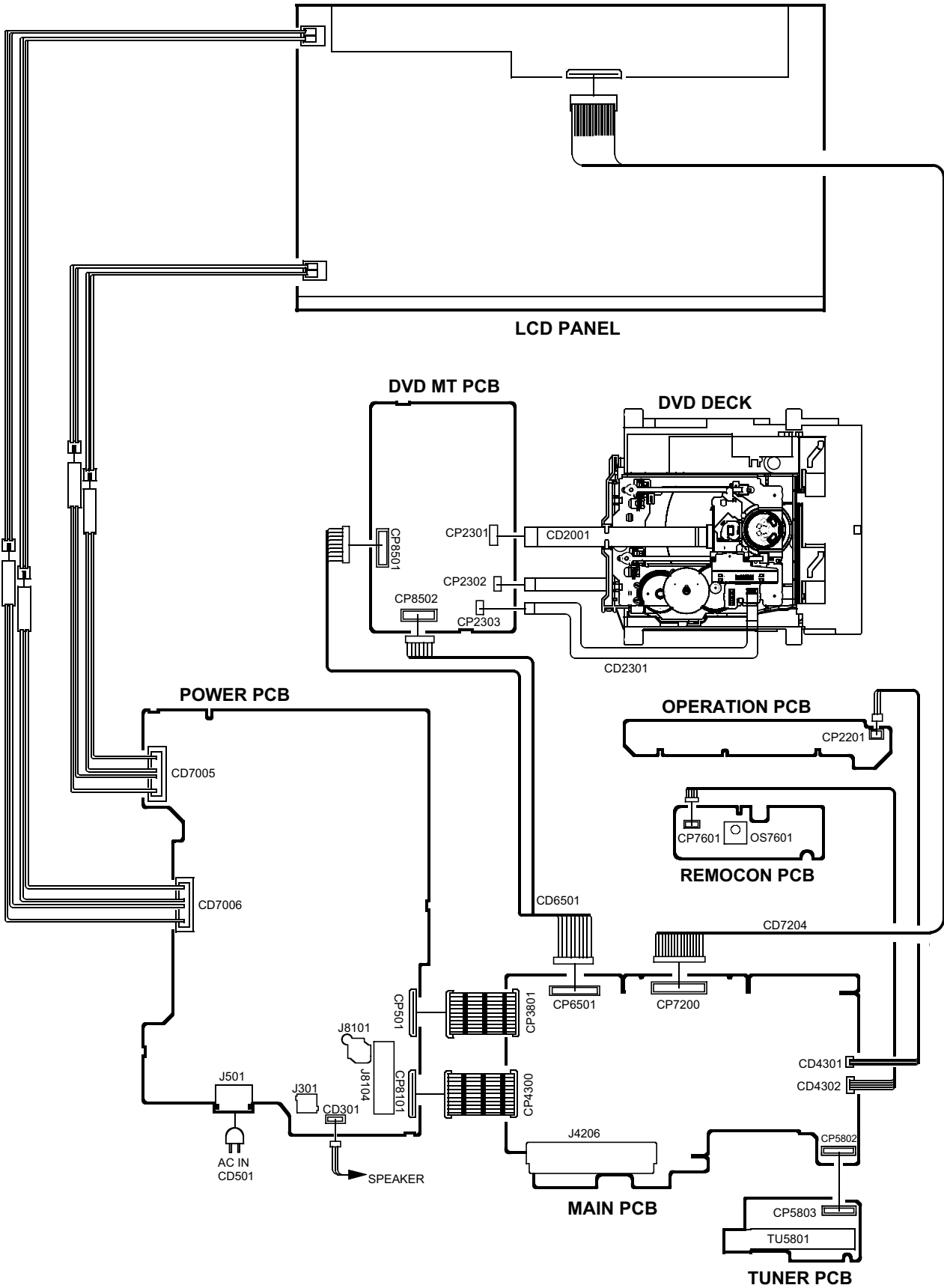
Please check if the fixed values of each of the adjustment item is set correctly referring below. (TUNER/AV)

NO.	FUNCTION	TUNER			AV1					AV2(RCA)					AV2(RCA)					AV1(RCA)				
					CVBS					CVBS					S(Y/C)					RGB				
		576i			576i			480i		576i			480i		576i			480i		576i			480i	
		PAL50	PAL60	SECAM	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43
STEP No.																								
30	BRIGHT CENTER	-7	0	768	-5	0	0	-5	0	-2	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
31	BRIGHT MAX	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
32	BRIGHT MIN	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80
33	TINT CENTER	0	0	0	0	0	0	0	0	-4	0	0	-4	0	0	0	0	0	0	0	0	0	0	0
34	CONTRAST CENTER	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	CONTRAST MAX	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
36	CONTRAST MIN	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
37	CONTRAST 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
38	COLOR CENTER	40	40	40	40	40	40	40	40	44	40	40	44	40	40	40	40	40	40	40	40	40	40	40
39	COLOR MAX	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
40	COLOR MIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: For the step no. with * mark, please adjust it according to the situation of the set.

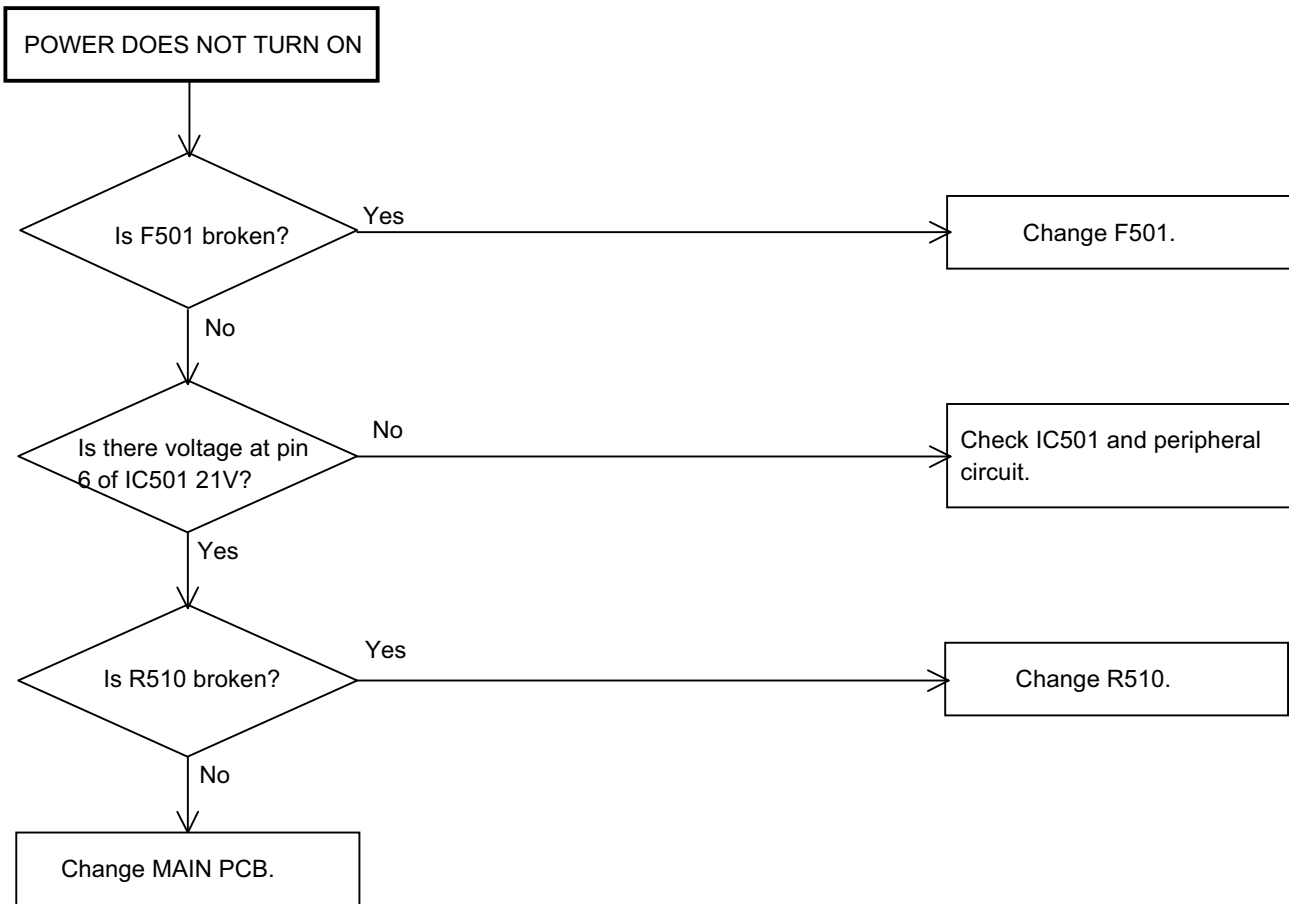
ELECTRICAL ADJUSTMENTS

3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

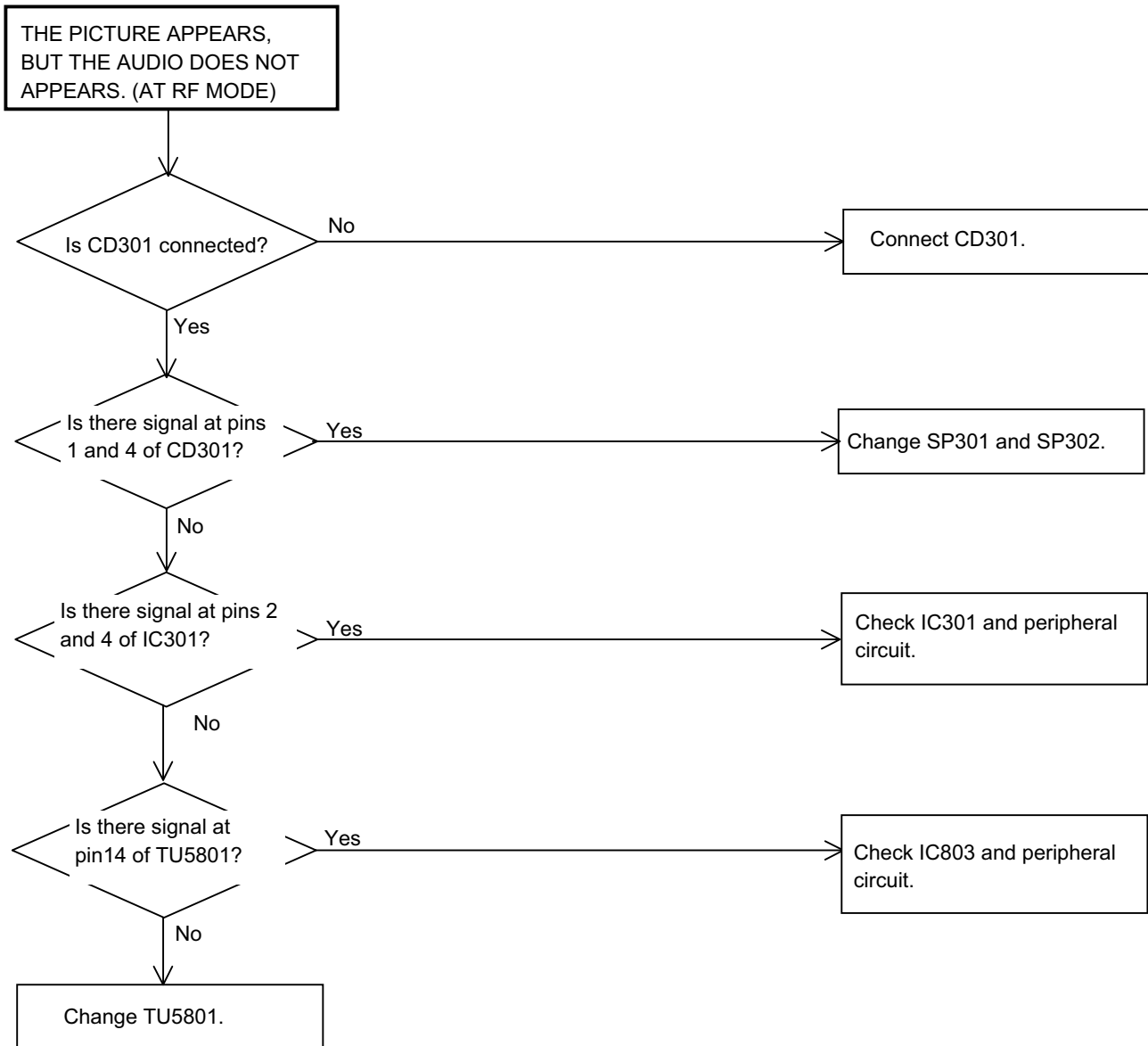


TROUBLESHOOTING GUIDE

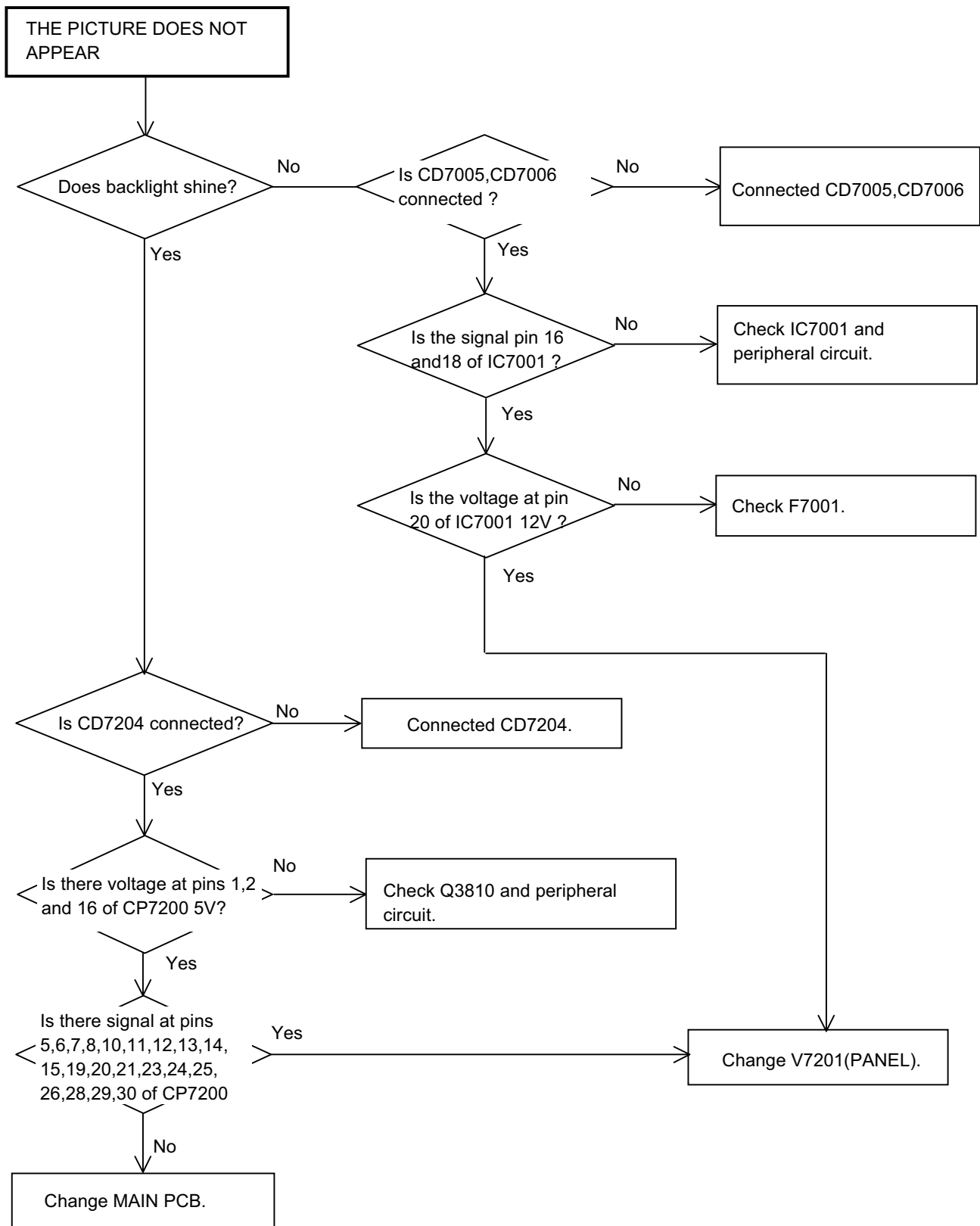
(LCD SECTION)



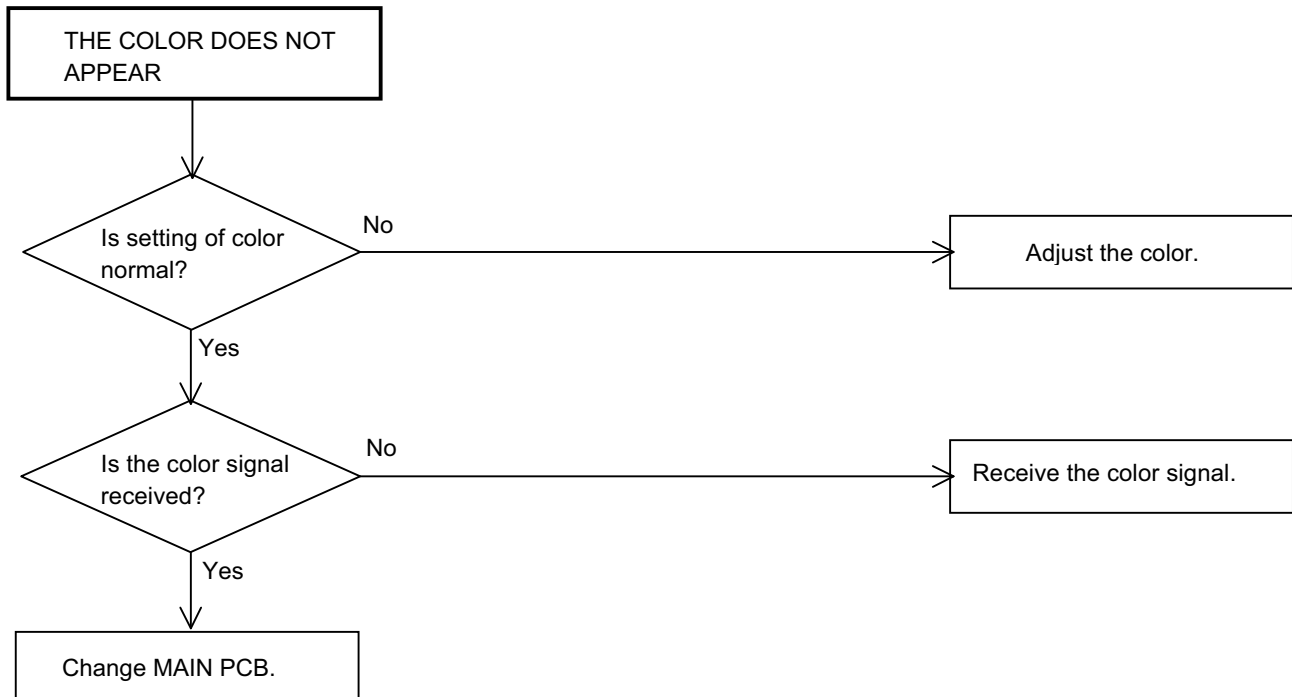
TROUBLESHOOTING GUIDE



TROUBLESHOOTING GUIDE

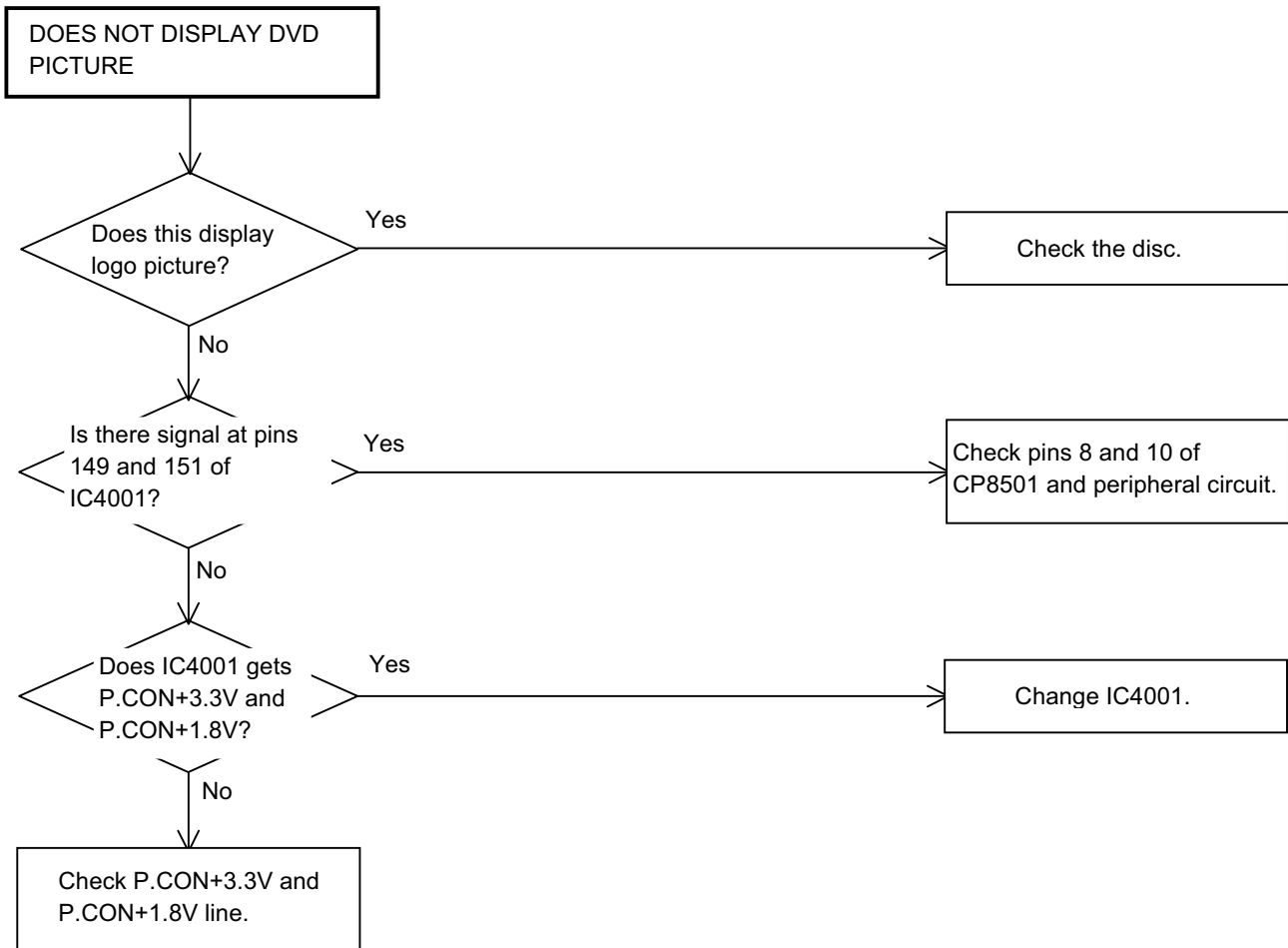


TROUBLESHOOTING GUIDE

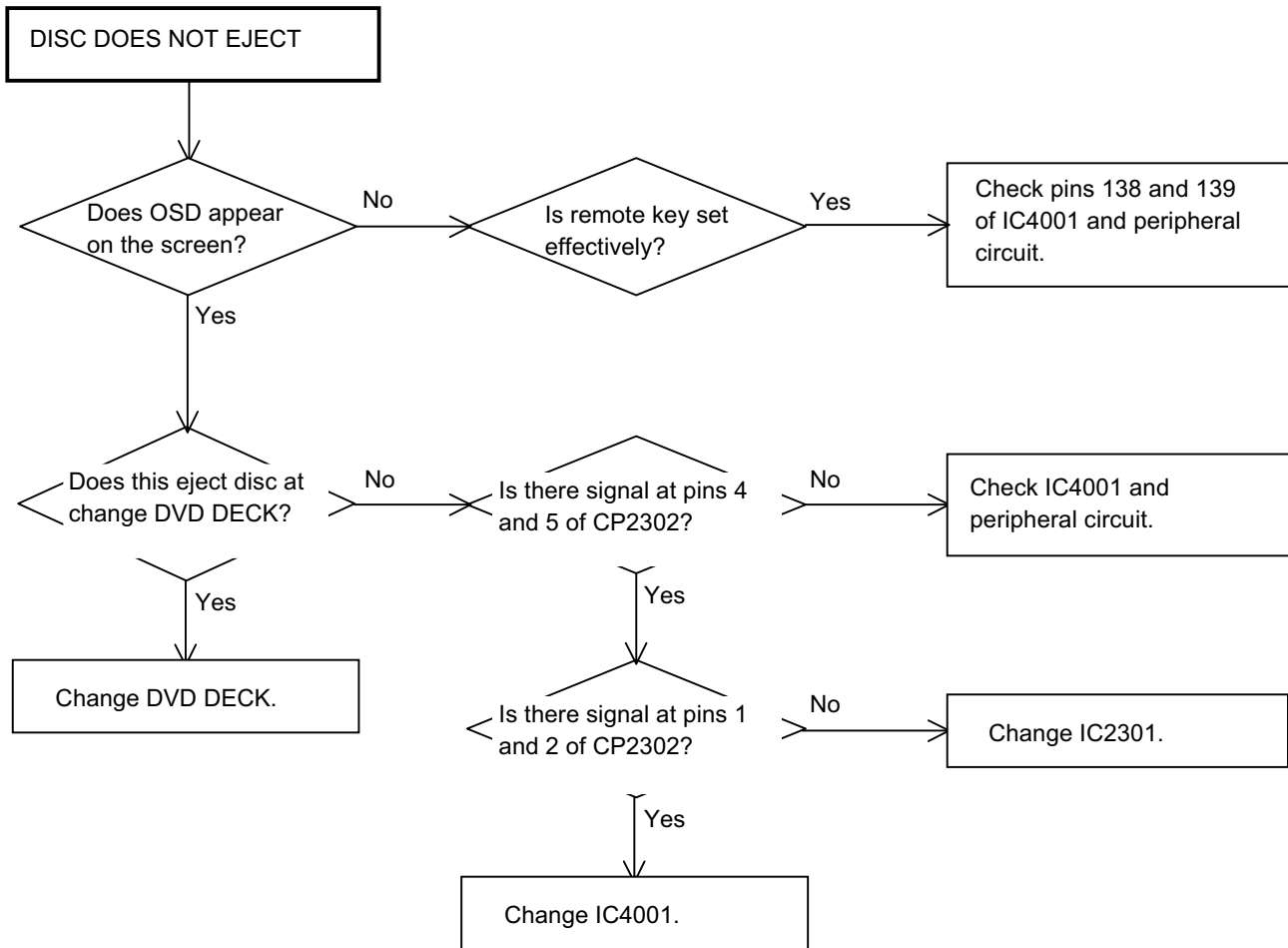


TROUBLESHOOTING GUIDE

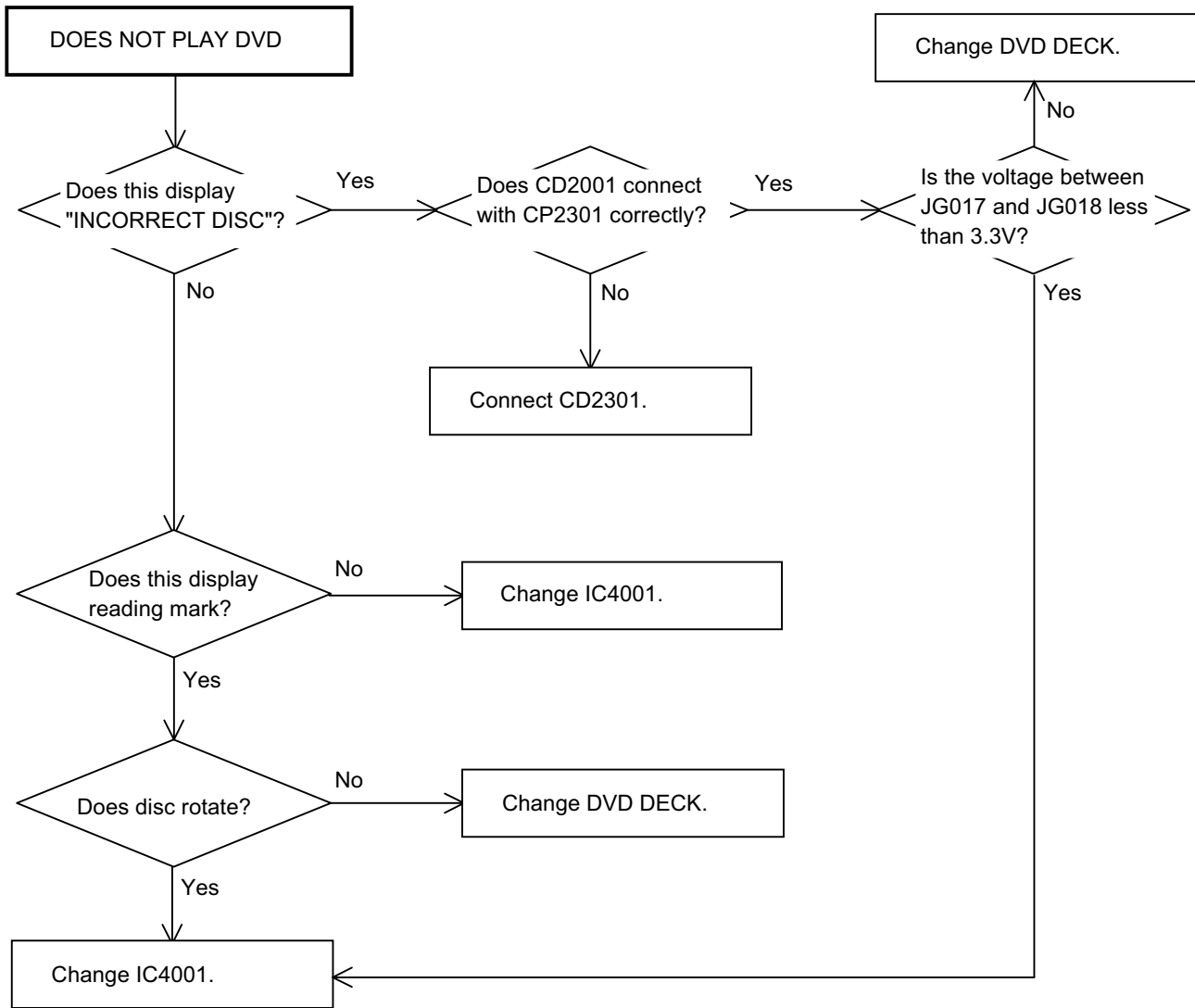
(DVD SECTION)



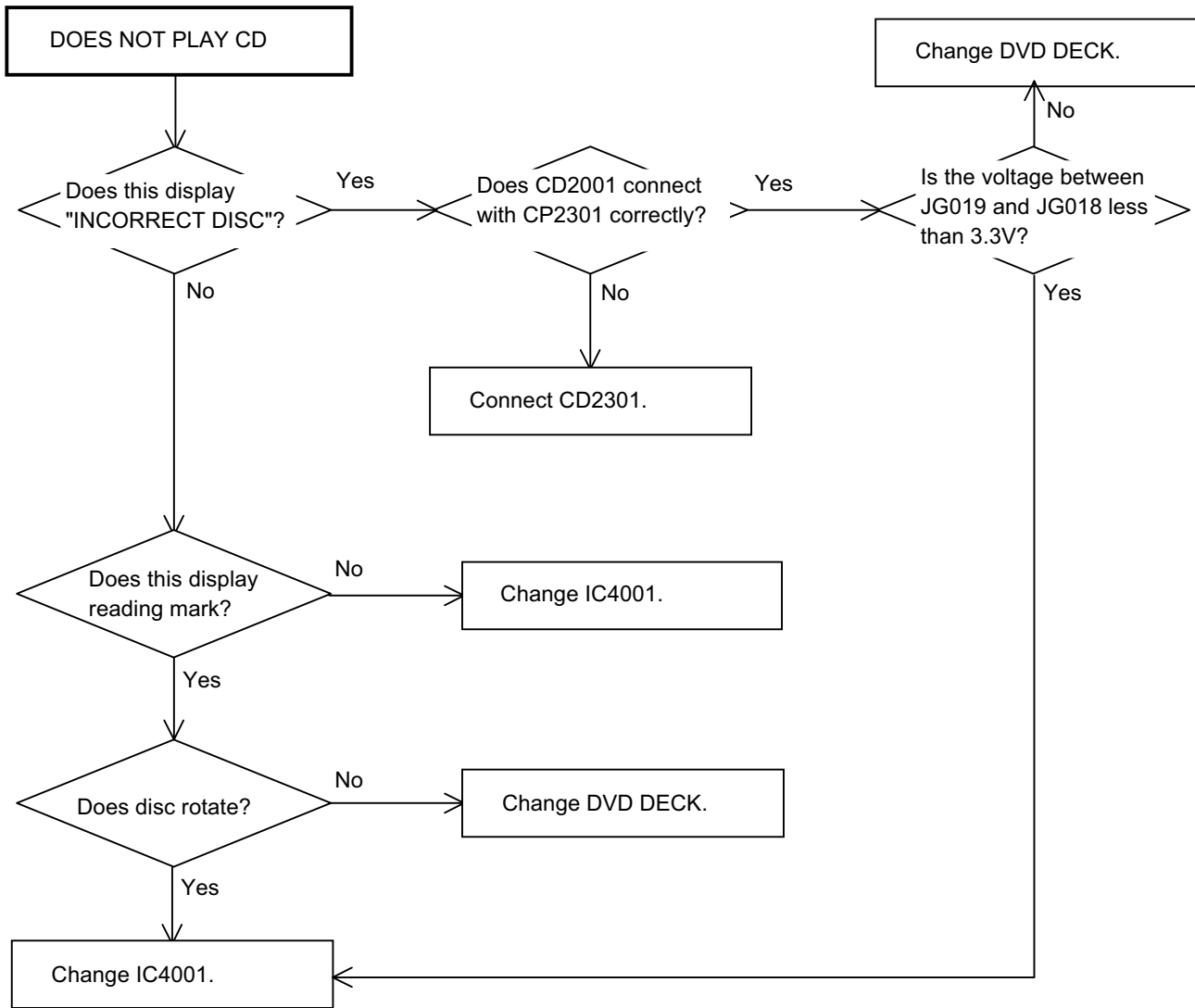
TROUBLESHOOTING GUIDE



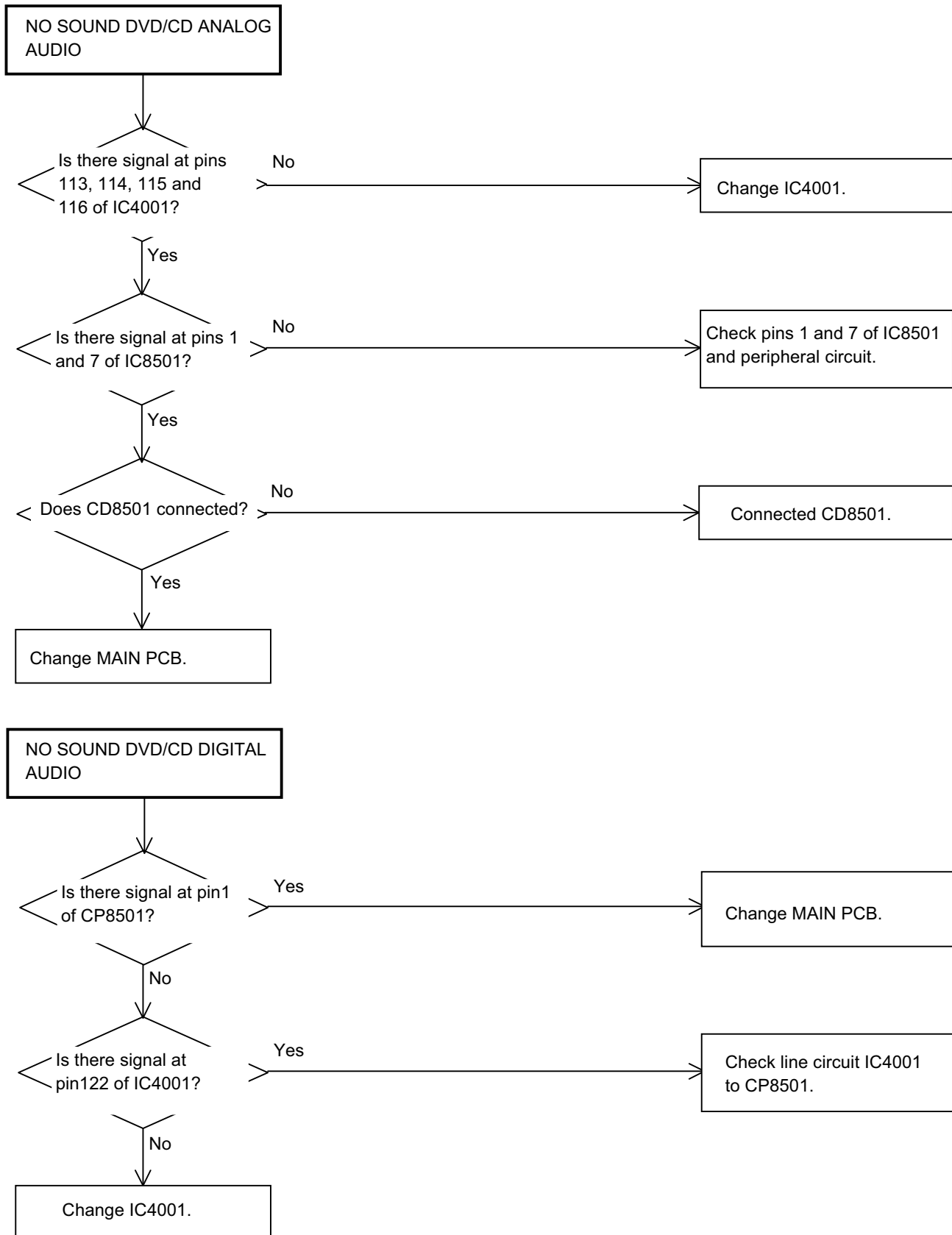
TROUBLESHOOTING GUIDE



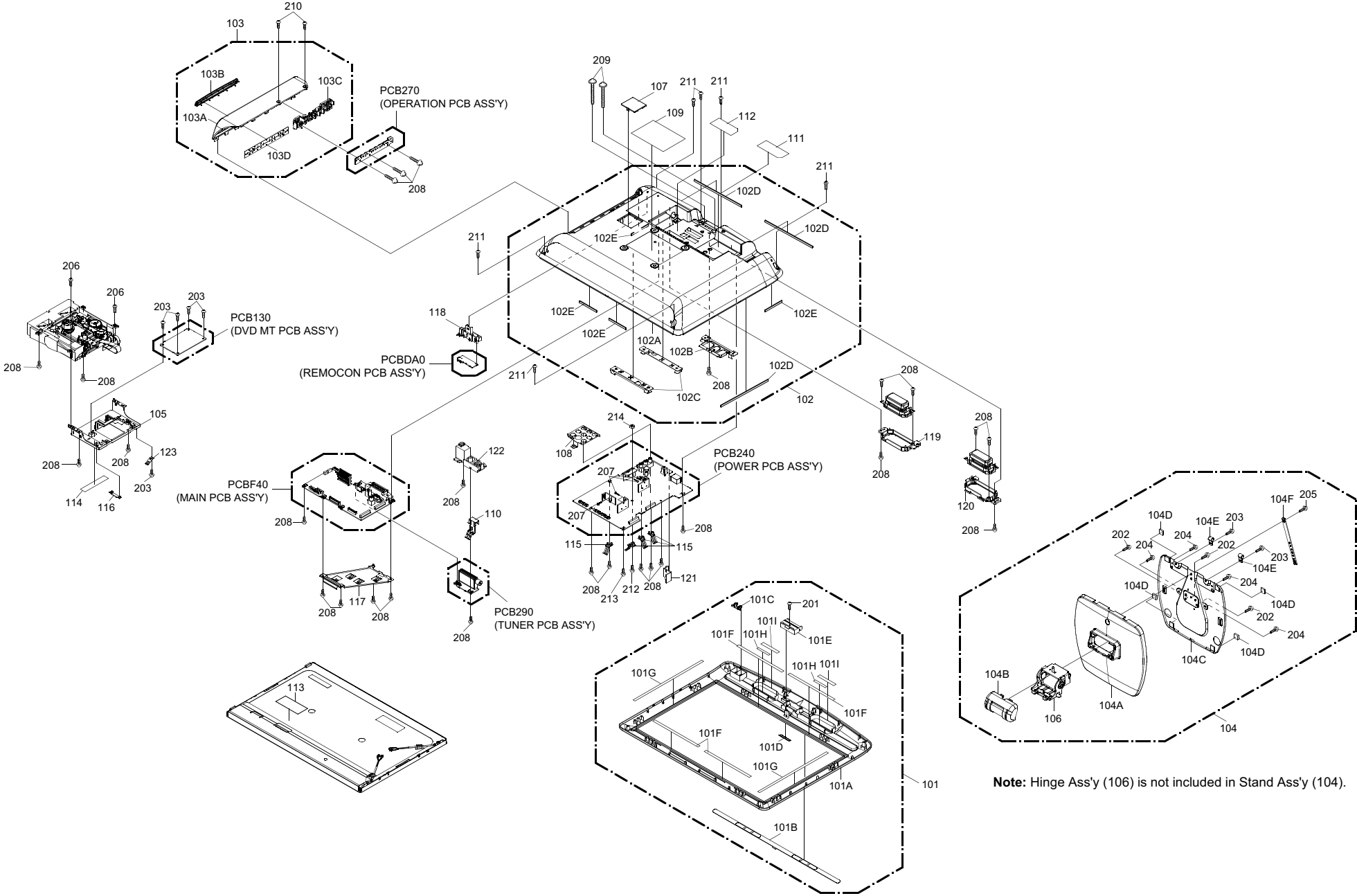
TROUBLESHOOTING GUIDE



TROUBLESHOOTING GUIDE

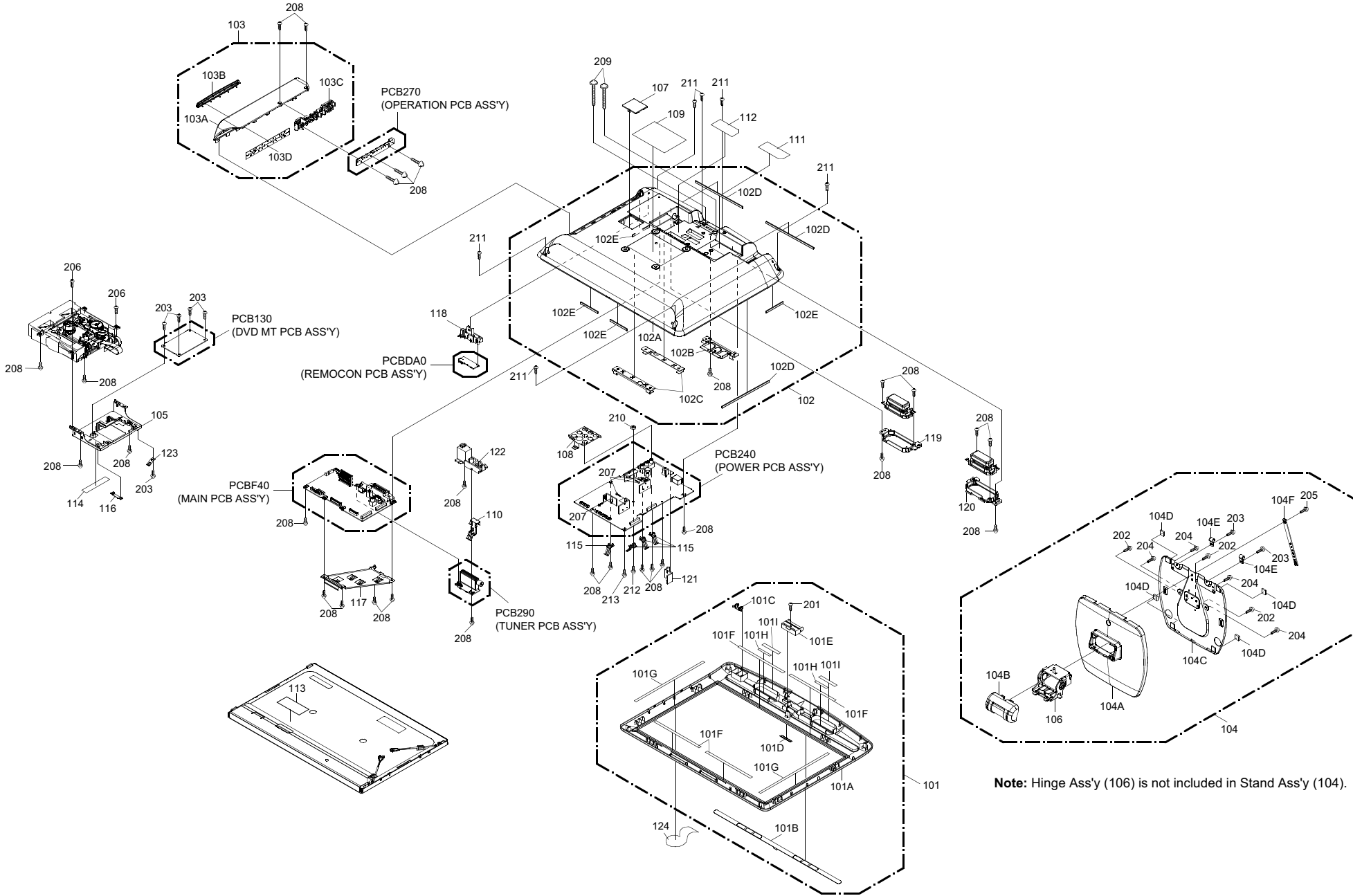


MECHANICAL EXPLODED VIEW



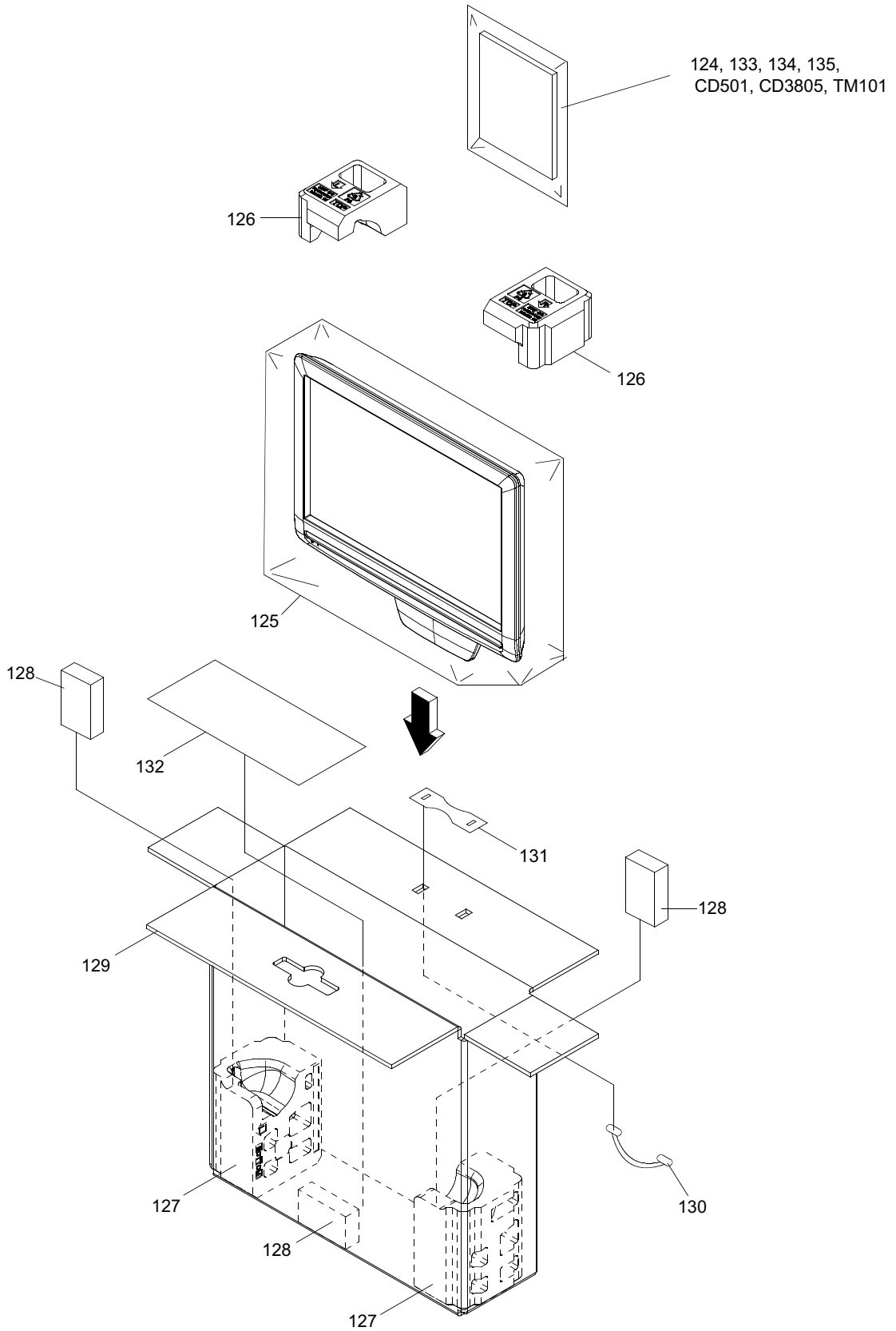
Note: Hinge Ass'y (106) is not included in Stand Ass'y (104).

MECHANICAL EXPLODED VIEW

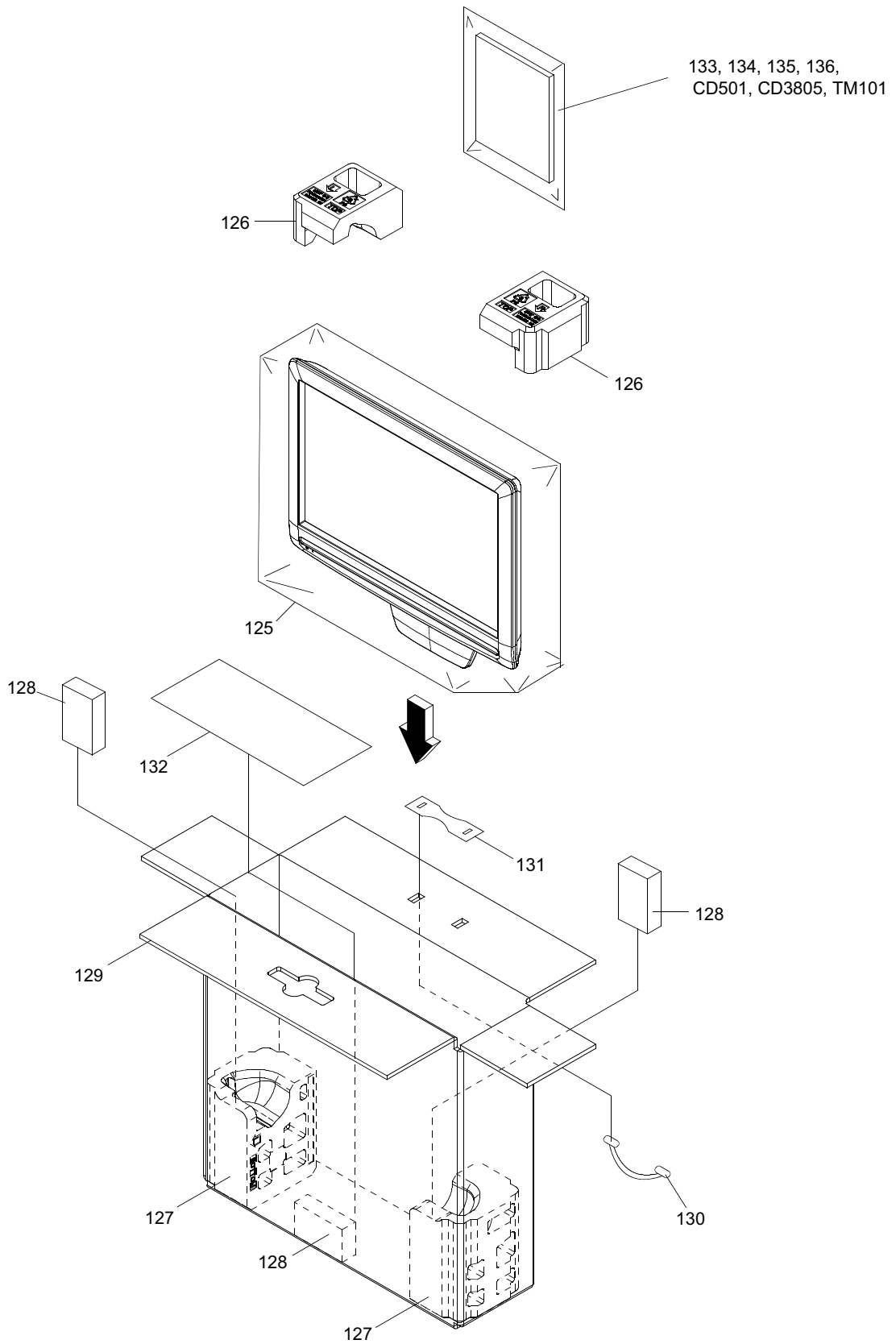


Note: Hinge Ass'y (106) is not included in Stand Ass'y (104).

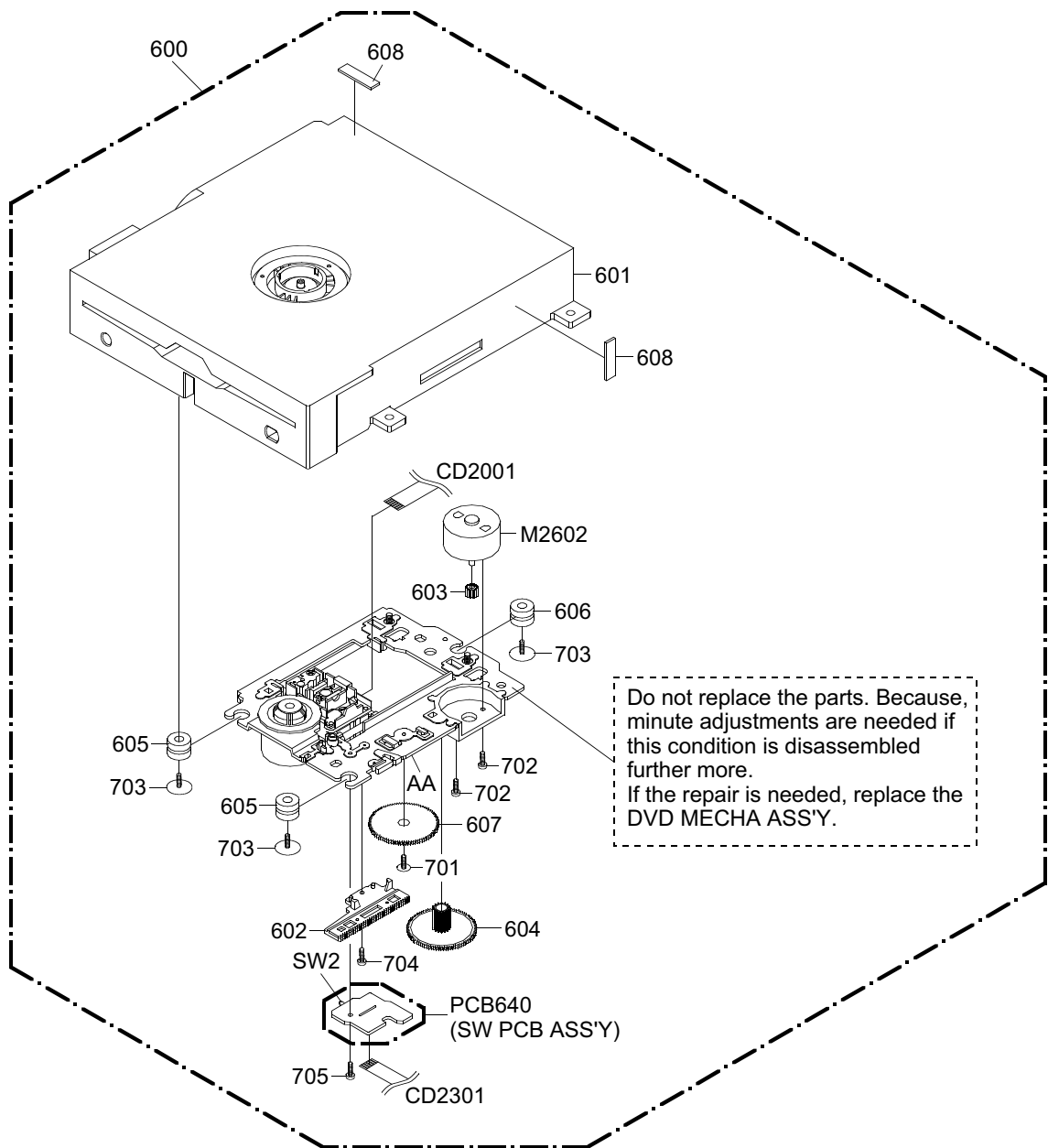
MECHANICAL EXPLODED VIEW (PACKING DIAGRAM)



MECHANICAL EXPLODED VIEW (PACKING DIAGRAM)



DVD DECK EXPLODED VIEW



CLASS	MARK
GREASE	AA

NOTE: Applying positions AA for the grease are displayed for this section. Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
101	AE016525	7A708A046A	FRONT CABI ASS'Y
101A	AE016526	708WPDA034	CABINET FRONT
101B	AE009570	702WNAA005	SHEET SPEAKER
101C	AE009571	713WPAA280	GLASS LED
101D	AE007694	7235490068	BADGE BRAND
101E	AE009572	761WPAA177	COVER STAND
101F	AE003760	800WQ0A046	FELT SHEET
101G	AE009671	800WQ0A073	FELT SHEET
101H	AE016527	800WQ0A094	FELT SHEET
101I	AE009679	800WQ0A119	FELT SHEET
102	AE016528	7A702A654A	BACK CABI ASS'Y
102A	AE016529	702WPAB316	CABINET BACK
102B	AE009577	761WSAA102	ANGLE HINGE
102C	AE009578	761WSA0634	ANGLE BACK
102D	AE003026	800WQ0A079	FELT SHEET
102E	AE007708	800WQ00095	FELT SHEET
103	AE009795	7A7110043A	PANEL SIDE ASS'Y
103A	AE009779	711WPD0763	PANEL SIDE
103B	AE009581	711WPEA001	SLOT DVD
103C	AE009582	735WPAB101	BUTTON FRAME
103D	AE008459	800WQ00105	FELT SHEET
104	AE009584	7A704A085A	STAND ASS'Y
104A	AE009585	704WPAA066	STAND
104B	AE009586	761WPAA181	COVER HINGE
104C	AE009587	761WSBA014	ANGLE STAND
104D	AE009624	800SRA0002	CUSHION LEG VEB1349-A
104E	AE008947	899NAGCL14	CABLE CLAMP
104F	AE007710	89900FB118	BAND
105	AE009790	761WSA0679	ANGLE MPEG
106	AE009590	706KSAA001	HINGE ASS'Y
107	AE009591	706WPA0031	COVER CONNECTOR
108	AE009786	752WSA0716	SHIELD JACK
109	AE016530	722549A747	SHEET RATING
110	AE009763	744WUA0035	SPRING EARTH TUNER
111	AE016531	723000E028	SHEET JACK-1
112	AE016532	723000E046	SHEET JACK-2
113	AE009796	800WQ00134	FELT SHEET 40*60*T0.5
114	AE008287	726000A139	SHEET CAUTION
115	AE009784	744WUA0038	SPRING EARTH-3
116	AE009627	899RFPCC25V	HOLDER CORD
117	AE009858	753WUA0101	SPRING EARTH-1
118	AE009600	761WPAA180	HOLDER REMOCON
119	AE009601	761WPAA184	HOLDER SPEAKER-L
120	AE009602	761WPAA187	HOLDER SPEAKER-R
121	AE009629	761WPA0515	HOLDER PCB
122	AE009788	761WPA0523	PLATE PCB
123	AE009841	752WSA0723	SPRING,EARTH
124	AE016533	J51K0207A	QUICK SET-UP SHEET(E)
125	AE009842	791WHAA240	LAMIFILM BAG
126	AE009606	792WHAA246	PACKAGE TOP
127	AE009607	792WHAA247	PACKAGE BOTTOM
128	AE009791	792WHA0758	PAD FOAM
129	AE016534	793WCDD907	GIFT BOX
130	AE009603	794WHA0003	HANDLE
131	AE009604	794WHA0004	HANDLE STOPPER
132	AE009847	795WCA0724	PAD 350*165
133	AE009609	JB5ND000	POLYBAG,INSTRUCTION(RED CAUTION)
134	AE016535	J51K0201A	INSTRUCTION BOOK(E)
135	AE016536	J51K0261A	INSTRUCTION BOOK(TUR/POL/GRE/GER/DUT/FRE)
201	AE003528	8110630A0U	SCREW TAP TITE(P) BRAZIER 3*10 CH
202	AE005140	810A14080U	SCREW WASHER(A) M4*8 CH
203	AE005675	810923060U	SCREW TAP TITE(B) BIND 3*6 CH
204	AE009612	8110K3080U	SCREW TAP TITE(P) LAMI HEAD 3*8 CH
205	AE007747	814623080U	SCREW TAP TITE(B) BIND 3*5.7+4*2.3 CH
206	AE003526	810923080U	SCREW TAP TITE(B) BIND 3*8 CH
207	AE003524	8109I30A0U	SCREW TAP TITE(B) WH7 3*10 CH
208	AE004849	8109230A0U	SCREW TAP TITE(B) BIND 3*10 CH
209	AE016206	8117540A6S	SCREW TAPPING(B0) TRUSS 4*16 BK
210	AE009613	8109230A0S	SCREW TAP TITE(B) BIND 3*10 BK
211	AE009614	8109230A4S	SCREW TAP TITE(B) BIND 3*14 BK
212	AE016537	810A13080U	SCREW WASHER(A) M3*8 CH
213	AE005473	8109D30A0U	SCREW TAP TITE(B) WH8 3*10 CH
214	AE016239	830023000U	NUT M3

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
101	AE016600	7A708A051A	FRONT CABI ASS'Y
101A	AE016601	708WPDA038	CABINET FRONT
101B	AE009640	702WNBA011	SHEET SPEAKER
101C	AE009571	713WPAA280	GLASS LED
101D	AE007694	7235490068	BADGE BRAND
101E	AE009684	761WPAA196	COVER STAND
101F	AE003760	800WQ0A046	FELT SHEET
101G	AE009671	800WQ0A073	FELT SHEET
101H	AE016527	800WQ0A094	FELT SHEET
101I	AE009679	800WQ0A119	FELT SHEET
102	AE016602	7A702A698A	BACK CABI ASS'Y
102A	AE016603	702WPAB332	CABINET BACK
102B	AE009577	761WSAA102	ANGLE HINGE
102C	AE009578	761WSA0634	ANGLE BACK
102D	AE003026	800WQ0A079	FELT SHEET
102E	AE007708	800WQ00095	FELT SHEET
103	AE016604	7A711A102A	PANEL SIDE ASS'Y
103A	AE016605	711WPDA813	PANEL SIDE
103B	AE009581	711WPEA001	SLOT DVD
103C	AE009645	735WPAB117	BUTTON FRAME
103D	AE008459	800WQ00105	FELT SHEET
104	AE009866	7A704A115A	STAND ASS'Y
104A	AE009647	704WPAA068	STAND
104B	AE009648	761WPAA189	COVER HINGE
104C	AE009587	761WSBA014	ANGLE STAND
104D	AE009624	800SRA0002	CUSHION LEG VEB1349-A
104E	AE008947	899NAGCL14	CABLE CLAMP
104F	AE007710	89900FB118	BAND
105	AE009790	761WSA0679	ANGLE MPEG
106	AE009590	706KSAA001	HINGE ASS'Y
107	AE009650	706WPA0034	COVER CONNECTOR
108	AE009786	752WSA0716	SHIELD JACK
109	AE016606	722549A750	SHEET RATING
110	AE009763	744WJUA0035	SPRING EARTH TUNER
111	AE016607	723000E044	SHEET JACK-1
112	AE016608	723000E045	SHEET JACK-2
113	AE009796	800WQ00134	FELT SHEET 40*60*T0.5
114	AE008287	726000A139	SHEET CAUTION
115	AE009784	744WJUA0038	SPRING EARTH-3
116	AE009627	899RFPC25V	HOLDER CORD
117	AE009858	753WJUA0101	SPRING EARTH-1
118	AE009600	761WPAA180	HOLDER REMOCON
119	AE009601	761WPAA184	HOLDER SPEAKER-L
120	AE009602	761WPAA187	HOLDER SPEAKER-R
121	AE009629	761WPA0515	HOLDER PCB
122	AE009788	761WPA0523	PLATE PCB
123	AE009841	752WSA0723	SPRING,EARTH
124	AE016609	723549A095	POP LABEL
125	AE009842	791WHAA240	LAMIFILM BAG
126	AE009606	792WHAA246	PACKAGE TOP
127	AE009607	792WHAA247	PACKAGE BOTTOM
128	AE009791	792WHA0758	PAD FOAM
129	AE016610	793WCDD951	GIFT BOX
130	AE009603	794WHA0003	HANDLE
131	AE009604	794WHA0004	HANDLE STOPPER
132	AE009847	795WCA0724	PAD 350*165
133	AE009609	JB5ND000	POLYBAG,INSTRUCTION(RED CAUTION)
134	AE016535	J51K0201A	INSTRUCTION BOOK(E)
135	AE016536	J51K0261A	INSTRUCTION BOOK(TUR/POL/GRE/GER/DUT/FRE
136	AE016533	J51K0207A	QUICK SET-UP SHEET(E)
201	AE003528	8110630A0U	SCREW TAP TITE(P) BRAZIER 3*10 CH
202	AE005140	810A14080U	SCREW WASHER(A) M4*8 CH
203	AE005675	810923060U	SCREW TAP TITE(B) BIND 3*6 CH
204	AE009612	8110K3080U	SCREW TAP TITE(P) LAMI HEAD 3*8 CH
205	AE007747	814623080U	SCREW TAP TITE(B) BIND 3*5.7+4*2.3 CH
206	AE003526	810923080U	SCREW TAP TITE(B) BIND 3*8 CH
207	AE003524	8109I30A0U	SCREW TAP TITE(B) WH7 3*10 CH
208	AE004849	8109230A0U	SCREW TAP TITE(B) BIND 3*10 CH
209	AE004847	8117540A6U	SCREW TAPPING(B0) TRUSS 4*16 CH
210	AE016239	830023000U	NUT M3
211	AE009655	8109230A4U	SCREW TAP TITE(B) BIND 3*14 CH
212	AE016537	810A13080U	SCREW WASHER(A) M3*8 CH
213	AE005473	8109D30A0U	SCREW TAP TITE(B) WH8 3*10 CH

DVD DECK REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
△600	AE009615	A50N01P650	DVD MECHA ASS'Y A50N01P650
601	AE008499	92SBB0033A	LOADER SUB ASS'Y DLM1D29-31
602	AE005815	92AAA0017A	FEED RACK ASS'Y
603	AE003551	92P100088A	GEAR,MOTOR
604	AE005805	92P100117A	GEAR,MIDDLE
605	AE008500	92P200017A	INSULATOR, F
606	AE008501	92P200018A	INSULATOR, R
607	AE005816	92P100116A	GEAR,FEED
608	AE016078	800WFAA008	CUSHION C
701	AE005817	92P700007A	SCREW,GEAR FEED
702	AE003554	814011723U	SCREW,PAN M1.7*2.3 P3 CH
703	AE003555	816112080U	SEMS.TAP TITE(P) PAN W10 2*8 CH
704	AE005006	813381750U	SCREW,T-TITE(B)CAMERA PAN M1.7*5.0 P3 CH
705	AE003557	811022080U	SCREW,TAP TITE(P) BIND 2*8 CH
CD2001	AE009434	12C14O1602	CORD JUMPER FFC05241600408T1-A04
CD2301	AE003558	122H062102	CORD JUMPER 2H062102
M2602	AE009616	1515T98006	MOTOR WRF-300CA-10460A
PCB640	AE008503	A5X002C640	SW PCB ASS'Y DED020A
SW2	AE001158	0500101036	PUSH SWITCH ESE22MH22

DVD DECK REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
△600	AE009615	A50N01P650	DVD MECHA ASS'Y A50N01P650
601	AE008499	92SBB0033A	LOADER SUB ASS'Y DLM1D29-31
602	AE005815	92AAA0017A	FEED RACK ASS'Y
603	AE003551	92P100088A	GEAR,MOTOR
604	AE005805	92P100117A	GEAR,MIDDLE
605	AE008500	92P200017A	INSULATOR, F
606	AE008501	92P200018A	INSULATOR, R
607	AE005816	92P100116A	GEAR,FEED
608	AE016078	800WFAA008	CUSHION C
701	AE005817	92P700007A	SCREW,GEAR FEED
702	AE003554	814011723U	SCREW,PAN M1.7*2.3 P3 CH
703	AE003555	816112080U	SEMS.TAP TITE(P) PAN W10 2*8 CH
704	AE005006	813381750U	SCREW,T-TITE(B)CAMERA PAN M1.7*5.0 P3 CH
705	AE003557	811022080U	SCREW,TAP TITE(P) BIND 2*8 CH
CD2001	AE009434	12C14O1602	CORD JUMPER FFC05241600408T1-A04
CD2301	AE003558	122H062102	CORD JUMPER 2H062102
M2602	AE009616	1515T98006	MOTOR WRF-300CA-10460A
PCB640	AE008503	A5X002C640	SW PCB ASS'Y DED020A
SW2	AE001158	0500101036	PUSH SWITCH ESE22MH22

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
RESISTORS				
△ R503	75006901	RC31X1126J	RC	12M OHM 1W
△ R505	AE009485	R63884330J	R,FUSE	33 OHM 1/4W
△ R506	AE002150	R803R9333J	RC	33K OHM 1/16W
△ R509	AE009486	RC31X1125J	RC	1.2M OHM 1W
△ R510	AE005735	R63881R22J	R,FUSE	0.22 OHM 1W
△ R518	AE012427	R002T4101J	RC	100 OHM 1/4W
△ R544	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R545	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R546	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R547	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R7038	AE009711	R63882220J	R,FUSE	22 OHM 1/2W
△ R7039	AE009711	R63882220J	R,FUSE	22 OHM 1/2W
CAPACITORS				
△ C501	AE001725	CS0PB0413K	CC	0.001 UF 50V B
△ C502	AE009804	E8E52H121D	CE	120 UF 400V
△ C503	AE011287	CS0PCH4L2J	CC	330 PF 50V CH
△ C504	AE008913	E7EYF2102M	CE	1000 UF 16V
△ C505	AE011289	CS0PCH4S1J	CC	56 PF 50V CH
△ C506	AE012287	P2122B224M	CMP	0.22 UF 275V ECQUL
△ C507	AE011227	CD39E0M13M	CC	0.001 UF 250V
△ C508	AE012286	P2122B104M	CMP	0.1 UF 275V ECQUL
△ C510	AE011227	CD39E0M13M	CC	0.001 UF 250V
△ C513	AE011392	C03L0R7Q2K	CC	470 PF 2KV R
△ C514	AE009491	CD39E0MQ2K	CC	470 PF 250V
△ C518	AE009492	P332E4223J	CCP	0.022 UF 400V
△ C520	75007051	E8E2U54R7D	CE	4.7 UF 50V
△ C522	AE008913	E7EYF2102M	CE	1000 UF 16V
△ C525	AE008913	E7EYF2102M	CE	1000 UF 16V
C7026	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7029	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7030	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7033	AE009700	C234SLB11J	CC	10 PF 6KV SL
DIODES				
D107	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
△ D504	AE009461	D6C047110A	DIODE VARISTA	ENE471D-10A
△ D505	AE008372	D2LT001F50	DIODE SILICON	1F5-E
D506	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
△ D507	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
△ D508	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
D509	AE009494	DE7RB3302B	DIODE ZENER	UDZSNP33B TE-17
△ D510	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
△ D511	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D512	AE002133	D2BXARS010	DIODE SILICON	SARS01-V1
△ D514	AE011472	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
△ D515	AE009803	D28A10A080	DIODE SCHOTTKY BARRIER	FCHS10A08
△ D516	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D517	AE011502	D97U01601B	DIODE ZENER	MTZJ16B T-77
△ D518	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
△ D523	AE009803	D28A10A080	DIODE SCHOTTKY BARRIER	FCHS10A08
D804	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D805	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D1001	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D1002	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D2303	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D2304	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D3201	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
△ D3202	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
D3600	AE016508	D28R0QY040	DIODE SCHOTTKY BARRIER	EP10QY04-TE8L3
D3601	AE004937	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3603	AE004937	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3605	AE016508	D28R0QY040	DIODE SCHOTTKY BARRIER	EP10QY04-TE8L3
D3630	AE004795	DE7RB5R62B	DIODE ZENER	UDZSNP5.6B TE-17
△ D3801	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
△ D3802	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
D3804	AE008906	D28R11FS20	DIODE	EC11FS2-TE12L
△ D3805	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
△ D3806	AE008906	D28R11FS20	DIODE	EC11FS2-TE12L
D3807	AE009716	DE7RB1302B	DIODE ZENER	UDZSNP13B TE-17
D3809	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4002	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4003	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4005	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4008	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4211	AE008091	DE7RB4R72B	DIODE ZENER	UDZSNP4.7B TE-17
D4305	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7002	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7003	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7004	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7005	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7006	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7008	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
DIODES				
D7009	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7010	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7011	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7012	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7013	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7014	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7015	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7016	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7017	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7018	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7019	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7020	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7021	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7022	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7023	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7024	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7025	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7026	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7601	AE000288	0021E9Q010	LED	LTL-1BEFJ-002A
D8510	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
ICS				
IC101	AE016510	S51K02CM02	MEMORY DATA 52PIN FLASH MICOM ROM 16K	R5F21244SNFP
IC105	AE011998	I9UF032290	RESET IC 2.9V TYPE	PST3229NR
△ IC301	AE008430	I03SP20520	SOUND AMP 5W 2CH	LA42052-E
△ IC501	AE009499	ICAD055310	LOW STANDBY POWER IC CONTROL	FA5531P-A2
△ IC502	AE011889	I1KJ9A431A	VARIABLE SHUNT REGULATOR TAPE	KIA431A-AT
△ IC505	AE002809	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
IC801	AE016511	S51K02CE01	MEMORY DATA EEPROM 256K 12C	AT24C256BN-10SU-1.8
IC802	AE011998	I9UF032290	RESET IC 2.9V TYPE	PST3229NR
IC803	AE016512	S51K02CM01	MEMORY DATA SCALER	VCT6973G-FA-B3-000
△ IC2301	AE008194	I03FV65650	5CH MOTOR DRIVER IC	LA6565VR-TLM-E
△ IC3201	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
△ IC3202	AE008435	I1LF010150	DC-DC CONVERTER CONTROLLER	AL1015
△ IC3203	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
△ IC3204	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
△ IC3205	AE004653	I1KF98D050	REGULATOR 5V	KIA78D05F
△ IC3206	AE016513	I5HJ9B19U0	REGULATOR VO=1.9V IO=800MA	S-1170B19UC-OTETFG
IC3605	75007789	IG1F090250	144PIN TQFP HDMI RECEIVER	SI9025CTU
IC3606	AE016514	S51K02CE02	MEMORY DATA EEPROM 2K 12C	S-24CS02AFJ-TB-GE
△ IC3801	AE007825	I07F0C0WF0	1A REGULATOR	BA00BC0WFP-E2
△ IC3806	AE009719	I5HJ950UC0	REGULATOR VO=5.0V IO=800MA	S-1170B50UC-OUJTFG
IC4001	AE009720	ICQK06966A	VADDIS9 MPEG/MICON/DSP/RF-AMP	ZR36966ELCG-D-G
IC4005	AE008324	IF9J0164AG	1M*16*4BANK(64M) 143MHZ SDRAM	M12L64164A-7TG
IC4007	AE016515	S51Z01AF01	MEMORY DATA NOR FLASH 16M B00T	SST39VF1601-70-4C-EKE
IC4302	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC4303	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6501	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6502	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6503	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6504	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC7001	AE009512	I07F098820	19WLCD INVERTER IC	BD9882FV-E2
IC7002	AE009513	I0CF0902D0	QUAND OPERATIONNAL AMPLIFILE	LM2902DR
IC8501	AE009365	I0QF045650	DUAL OPEAMP	NJM4565M(TE1)
△ IC8502	AE009805	I1YF9117A0	VO=ADJ IO=1A TAPING	LD1117AL-ADJ-AA3-A-R
TRANSISTORS				
Q101	AE009515	T27T030190	FET	2SK3019_TL
Q102	AE009515	T27T030190	FET	2SK3019_TL
Q301	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q302	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
△ Q501	AE009722	T41GK35320	FET	2SK3532-01MR
Q505	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q1000	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1001	AE013032	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q1002	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1003	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1004	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q1005	AE013031	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK
Q1006	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2301	AE008330	TAAA1505SY	TRANSISTOR SILICON	KTA1505S-Y-RTK/P
Q2302	AE008330	TAAA1505SY	TRANSISTOR SILICON	KTA1505S-Y-RTK/P
△ Q3200	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3201	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△ Q3202	AE004665	TS3M000044	COMPOUND TRANSISTOR	CPH6312-TL-E
△ Q3205	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3206	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3601	AE009515	T27T030190	FET	2SK3019_TL
Q3602	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3603	AE009515	T27T030190	FET	2SK3019_TL
Q3604	AE009515	T27T030190	FET	2SK3019_TL
Q3605	AE009515	T27T030190	FET	2SK3019_TL
Q3618	AE009515	T27T030190	FET	2SK3019_TL

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
TRANSISTORS				
△ Q3801	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q3802	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3803	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3804	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△ Q3805	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3808	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
△ Q3809	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q3810	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q4200	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4201	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4205	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4210	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4214	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4217	AE013033	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4218	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4224	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4303	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4304	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4305	AE013032	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4306	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4307	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4308	AE013032	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4309	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4310	AE013011	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q5801	AE009515	T27T030190	FET	2SK3019_TL
Q5802	AE009515	T27T030190	FET	2SK3019_TL
Q7003	AE013048	T27T030180	FET	2SK3018T106
△ Q7004	AE009516	T250A06J30	FET	TK30A06J3(ORION.Q)
△ Q7005	AE009516	T250A06J30	FET	TK30A06J3(ORION.Q)
COILS & TRANSFORMERS				
△ L501	AE009366	029X000121	COIL, LINE FILTER	SS24H-K08240-CH
L503	AE013323	02167E220K	COIL	22 UH
L504	AE013322	02167E100K	COIL	10 UH
L3201	AE013322	02167E100K	COIL	10 UH
L3202	AE009723	0216MG220M	COIL	22 UH
L3601	AE009519	02D1000119	COIL CHOKE	EXC28CG900U
L3602	AE009519	02D1000119	COIL CHOKE	EXC28CG900U
L4204	AE013298	0216SD220J	COIL	22 UH
L4205	AE013298	0216SD220J	COIL	22 UH
L4206	AE013298	0216SD220J	COIL	22 UH
L4207	AE013298	0216SD220J	COIL	22 UH
L7001	AE013322	02167E100K	COIL	10 UH
L8501	AE008874	0216SD2R2J	COIL	2.2 UH
L8502	AE006570	0216SD1R0J	COIL	1 UH
△ T501	AE009724	0481240038	TRANSFORMER, SWITCHING	81240038
△ T7001	AE009521	048135109G	TRANSFORMER, SWITCHING	8135109G
△ T7002	AE009521	048135109G	TRANSFORMER, SWITCHING	8135109G
JACKS				
△ J301	AE009522	060R131024	HEADPHONE JACK	PJ-364H
△ J501	AE009725	064Q1A0011	JACK, AC	CCT2302-0701C
J4206	AE009726	063D100067	SOCKET, 21PIN	MRC-021H-02PC(O87)
△ J4208	AE009522	060R131024	HEADPHONE JACK	PJ-364H
J4301	AE009524	060R401140	RCA JACK	RCA-101HT(OR)
J8101	AE009526	062R750007	PLUG	DIN-417HA-01
J8102	AE009527	060R411058	RCA JACK	RCA-341H(NI)-09
J8103	AE009528	060R431039	RCA JACK	RCA-228H(3)NI-02
J8104	AE009529	060R431040	RCA JACK	RCA-341H(2)NI-06
SWITCHES				
SW2201	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2202	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2203	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2204	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2205	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2206	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2207	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
SW2208	AE013551	0504101T34	SWITCH, TACT	EVQ21505R
P.C. BOARD ASSEMBLIES				
PCB130	AE016516	A51K02C130	DVD MT PCB ASS'Y	DMG097A
PCB240	AE016517	A51K02C240	POWER PCB ASS'Y	CEG362A
PCB270	AE016518	A51K02C270	OPERATION PCB ASS'Y	CEG363A
PCB290	AE016519	A51K02C290	TUNER PCB ASS'Y	CEG367A
PCBDA0	AE016520	A51K02CDA0	REMOCON PCB ASS'Y	CEG364A
PCBF40	AE016521	A51K02CF40	MAIN PCB ASS'Y	CMG130A
MISCELLANEOUS				
B101	AE008878	024HC51816	CORE, BEADS	HCB1608KF-181T20
B303	AE009535	024HC13914	CORE, BEADS	HCB3216KF-391T20
B307	AE009535	024HC13914	CORE, BEADS	HCB3216KF-391T20
B308	AE009535	024HC13914	CORE, BEADS	HCB3216KF-391T20
B501	AE013373	024HT03564	CORE, BEADS	W4BRH3.5X6X1.0
B801	AE009377	024HC53306	CORE, BEADS	HCB1608KF-330T50
B802	AE008878	024HC51816	CORE, BEADS	HCB1608KF-181T20

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			MISCELLANEOUS	
B803	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B804	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B805	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B806	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B807	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B808	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B809	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B810	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B811	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B812	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B813	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B818	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B819	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B820	AE009773	024AC8102T	CORE,BEADS	BLM15AG102SN1D
B821	AE009773	024AC8102T	CORE,BEADS	BLM15AG102SN1D
B2305	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B3201	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3601	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3602	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3603	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3604	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3605	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B3606	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B3608	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B3609	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3610	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3613	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3802	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3803	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3804	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3807	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3808	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3809	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3810	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B4001	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4002	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4003	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4005	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4006	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4008	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4010	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4015	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4016	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4202	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4203	AE008879	024HC56013	CORE,BEADS	FCM1608KF-601T02
B4204	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B4228	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4303	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4304	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4305	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4308	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B4312	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B4317	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B4322	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B5803	AE009377	024HC53306	CORE,BEADS	HCB1608KF-330T50
B6501	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B6502	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B6504	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B7200	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B7201	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B8501	AE008394	024BC5121J	CORE,BEADS	BLM18PG121SN1D
B8502	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B8503	AE008394	024BC5121J	CORE,BEADS	BLM18PG121SN1D
B8504	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
BT001	AE016522	141L004019	BATTERY,MANGAN	R03 (AB) 2P TG AO DB
BT002	AE016522	141L004019	BATTERY,MANGAN	R03 (AB) 2P TG AO DB
CD301	AE009537	06E8142401	CORD CONNECTOR	E8142401
△ CD501	AE009734	120Q155804	CORD AC	P205-1324-4
CP101	AE009735	06GG270029	CONNECTOR PCB SIDE	A2001WV-7A
CP501	AE008882	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP503	AE013859	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP802	AE009736	06GG260029	CONNECTOR PCB SIDE	A2001WV-6A
CD3805	AE006481	06CPL02011	CABLE,PAL	TD-OR0157F
CD4301	AE009541	06CH231204	CORD CONNECTOR	CH231204
CD4302	AE016523	06E8251001	CORD CONNECTOR	E8251001
CD6501	AE009704	06E82M1102	CORD CONNECTOR	E82M1102
CD7005	AE009864	06E82E1203	CORD CONNECTOR	E82E1203
CD7006	AE009864	06E82E1203	CORD CONNECTOR	E82E1203
CD7204	AE009774	06EA2U2504	CORD CONNECTOR	EA2U2504
CP2201	AE013944	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P
CP2301	AE008156	069KYOT159	CONNECTOR PCB SIDE	LD07T2-24ND-03

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
MISCELLANEOUS				
CP2302	AE009544	069EV5T060	CONNECTOR PCB SIDE	04_6232_105_015_800+
CP2303	AE009545	069EV6T060	CONNECTOR PCB SIDE	04_6232_106_015_800+
CP3601	AE009550	06GDYL3038	CONNECTOR PCB SIDE	1A0300030
CP3801	AE008886	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4300	AE008886	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4302	AE009551	06G7S21501	CONNECTOR PCB SIDE	WD-00021-R
CP5802	AE009741	06GF2G0020	CONNECTOR PCB SIDE	WD-00028-R
CP5803	AE009742	06GF2G0010	CONNECTOR PCB SIDE	WD-00027-R
CP6501	AE009549	069S2M0079	CONNECTOR PCB SIDE	A2006WV0-2X11P
CP7200	AE009548	069S2U0739	CONNECTOR PCB SIDE	A2006WV0-2X15P
CP7601	AE013948	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P
CP8101	AE008882	06977NM020	CONNECTOR PCB SIDE	127301123K2
△ CP8501	AE009553	06GG2E0019	CONNECTOR PCB SIDE	A2001WR-14A
CP8502	AE013951	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CUS151	AE016076	800WFAA006	CUSHION A	
EL2401	AE014351	124116281A	EYE LET	XRY16X28BD
△ F501	AE002112	080NT2R504	FUSE	50T025H
△ F7001	AE004626	083LA05007	FUSE	1206FA5A-T
FH501	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
NR3601	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3602	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3603	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3604	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3605	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3606	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR7200	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7201	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7202	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7203	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7204	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7205	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7206	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7207	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7211	AE009557	11074470M7	R,NETWORK	CRA108470JV
OS7601	AE008414	077A033001	REMOTE RECEIVER	ROM-V338TAO
SH501	AE009776	126D000045	TERMINAL PIN	YQ-12
△ SP301	AE009558	070Y433004	SPEAKER	S0308F01
△ SP302	AE009558	070Y433004	SPEAKER	S0308F01
SH8501	AE009776	126D000045	TERMINAL PIN	YQ-12
SH8502	AE009776	126D000045	TERMINAL PIN	YQ-12
SH8503	AE009776	126D000045	TERMINAL PIN	YQ-12
SH8504	AE009776	126D000045	TERMINAL PIN	YQ-12
△ TH501	AE009559	DSQDNE5R0L	THERMISTOR	5D2-08LCS
TM101	AE009747	076D0PT010	TRANSMITTER	000-103000550
△ TU5801	AE009748	0163Y03011	RF UNIT	TDTG-S486D
△ V7201	AE009562	09EA119001	LCD	T190PW01_V0
X101	AE009387	100GT01616	CRYSTAL	B16000E011
X801	AE009388	100DT02007	CRYSTAL	DSX840GA
X3602	AE008624	100DT02801	CRYSTAL	SMD-49
X4001	AE009566	100GT02727	CRYSTAL	SMD-49 C27000J029

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
 CE..... ALUMI ELECTROLYTIC CAPACITOR
 CP..... POLYESTER CAPACITOR
 CPP..... POLYPROPYLENE CAPACITOR
 CPL..... PLASTIC CAPACITOR
 CMP..... METAL POLYESTER CAPACITOR
 CMPL..... METAL PLASTIC CAPACITOR
 CMPP..... METAL POLYPROPYLENE CAPACITOR

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
RESISTORS				
△ R503	75006901	RC31X1126J	RC	12M OHM 1W
△ R505	AE009485	R63884330J	R,FUSE	33 OHM 1/4W
△ R506	AE002150	R803R9333J	RC	33K OHM 1/16W
△ R509	AE009486	RC31X1125J	RC	1.2M OHM 1W
△ R510	AE005735	R63881R22J	R,FUSE	0.22 OHM 1W
△ R518	AE012427	R002T4101J	RC	100 OHM 1/4W
△ R544	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R545	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R546	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R547	AE009808	R861R42R0F	RC	2 OHM 1/4W
△ R7038	AE009711	R63882220J	R,FUSE	22 OHM 1/2W
△ R7039	AE009711	R63882220J	R,FUSE	22 OHM 1/2W
CAPACITORS				
△ C501	AE001725	CS0PB0413K	CC	0.001 UF 50V B
△ C502	AE009804	E8E52H121D	CE	120 UF 400V
△ C503	AE011287	CS0PCH4L2J	CC	330 PF 50V CH
△ C504	AE008913	E7EYF2102M	CE	1000 UF 16V
△ C505	AE011289	CS0PCH4S1J	CC	56 PF 50V CH
△ C506	AE012287	P2122B224M	CMP	0.22 UF 275V ECQUL
△ C507	AE011227	CD39E0M13M	CC	0.001 UF 250V
△ C508	AE012286	P2122B104M	CMP	0.1 UF 275V ECQUL
△ C510	AE011227	CD39E0M13M	CC	0.001 UF 250V
△ C513	AE011392	C03L0R7Q2K	CC	470 PF 2KV R
△ C514	AE009491	CD39E0MQ2K	CC	470 PF 250V
△ C518	AE009492	P332E4223J	CCP	0.022 UF 400V
△ C520	75007051	E8E2U54R7D	CE	4.7 UF 50V
△ C522	AE008913	E7EYF2102M	CE	1000 UF 16V
△ C525	AE008913	E7EYF2102M	CE	1000 UF 16V
C7026	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7029	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7030	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7033	AE009700	C234SLB11J	CC	10 PF 6KV SL
DIODES				
D107	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
△ D504	AE009461	D6C047110A	DIODE VARISTA	ENE471D-10A
△ D505	AE008372	D2LT001F50	DIODE SILICON	1F5-E
D506	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
△ D507	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
△ D508	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
D509	AE009494	DE7RB3302B	DIODE ZENER	UDZSNP33B TE-17
△ D510	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
△ D511	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D512	AE002133	D2BXARS010	DIODE SILICON	SARS01-V1
△ D514	AE011472	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
△ D515	AE009803	D28A10A080	DIODE SCHOTTKY BARRIER	FCHS10A08
△ D516	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D517	AE011502	D97U01601B	DIODE ZENER	MTZJ16B T-77
△ D518	AE011441	D2WTRM11C0	DIODE SILICON	RM11C-EIC
△ D523	AE009803	D28A10A080	DIODE SCHOTTKY BARRIER	FCHS10A08
D804	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D805	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D1001	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D1002	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D2303	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D2304	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D3201	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
△ D3202	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
D3600	AE016508	D28R0QY040	DIODE SCHOTTKY BARRIER	EP10QY04-TE8L3
D3601	AE004937	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3603	AE004937	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3605	AE016508	D28R0QY040	DIODE SCHOTTKY BARRIER	EP10QY04-TE8L3
D3630	AE004795	DE7RB5R62B	DIODE ZENER	UDZSNP5.6B TE-17
△ D3801	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
△ D3802	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
D3804	AE008906	D28R11FS20	DIODE	EC11FS2-TE12L
△ D3805	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
△ D3806	AE008906	D28R11FS20	DIODE	EC11FS2-TE12L
D3807	AE009716	DE7RB1302B	DIODE ZENER	UDZSNP13B TE-17
D3809	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4002	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4003	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4005	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4008	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4211	AE008091	DE7RB4R72B	DIODE ZENER	UDZSNP4.7B TE-17
D4305	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7002	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7003	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7004	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7005	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7006	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7008	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
D7009	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7010	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7011	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7012	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7013	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7014	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7015	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7016	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7017	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7018	AE011421	D1VT001330	DIODE,SILICON	1SS133T-77
D7019	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7020	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7021	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7022	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7023	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7024	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7025	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7026	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7601	AE000288	0021E9Q010	LED	LTL-1BEFJ-002A
D8510	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
			ICS	
IC101	AE009809	S51B03JM02	MEMORY DATA 52PIN FLASH MICOM ROM 16K	R5F21244SNFP
IC105	AE011998	I9UF032290	RESET IC 2.9V TYPE	PST3229NR
△IC301	AE008430	I03SP20520	SOUND AMP 5W 2CH	LA42052-E
△IC501	AE009499	ICAD055310	LOW STANDBY POWER IC CONTROL	FA5531P-A2
△IC502	AE011889	I1KJ9A431A	VARIABLE SHUNT REGULATOR TAPE	KIA431A-AT
△IC505	AE002809	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
IC801	AE016511	S51K02CE01	MEMORY DATA EEPROM 256K 12C	AT24C256BN-10SU-1.8
IC802	AE011998	I9UF032290	RESET IC 2.9V TYPE	PST3229NR
IC803	AE016512	S51K02CM01	MEMORY DATA SCALER	VCT6973G-FA-B3-000
△IC2301	AE008194	I03FV65650	5CH MOTOR DRIVER IC	LA6565VR-TLM-E
△IC3201	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
△IC3202	AE008435	I1LF010150	DC-DC CONVERTER CONTROLLER	AL1015
△IC3203	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
△IC3204	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
△IC3205	AE004653	I1KF98D050	REGULATOR 5V	KIA78D05F
△IC3206	AE016513	I5HJ9B19U0	REGULATOR VO=1.9V IO=800MA	S-1170B19UC-OTETFG
IC3605	75007789	IG1F090250	144PIN TQFP HDMI RECEIVER	SI9025CTU
IC3606	AE016514	S51K02CE02	MEMORY DATA EEPROM 2K 12C	S-24CS02AFJ-TB-GE
△IC3801	AE007825	I07F0C0WF0	1A REGULATOR	BA00BC0WFP-E2
△IC3806	AE009719	I5HJ950UC0	REGULATOR VO=5.0V IO=800MA	S-1170B50UC-OUJTFG
IC4001	AE009720	ICQK06966A	VADDIS9 MPEG/MICON/DSP/RF-AMP	ZR36966ELCG-D-G
IC4005	AE008324	IF9J0164AG	1M*16*4BANK(64M) 143MHZ SDRAM	M12L64164A-7TG
IC4007	AE016515	S51Z01AF01	MEMORY DATA NOR FLASH 16M B00T	SST39VF1601-70-4C-EKE
IC4302	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC4303	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6501	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6502	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6503	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6504	AE011796	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC7001	AE009512	I07F098820	19WLCD INVERTER IC	BD9882FV-E2
IC7002	AE009513	I0CF0902D0	QUAND OPERATIONNAL AMPLIFILE	LM2902DR
IC8501	AE009365	I0QF045650	DUAL OPEAMP	NJM4565M(Te1)
△IC8502	AE009805	I1YF9117A0	VO=ADJ IO=1A TAPING	LD1117AL-ADJ-AA3-A-R
			TRANSISTORS	
Q101	AE009515	T27T030190	FET	2SK3019_TL
Q102	AE009515	T27T030190	FET	2SK3019_TL
Q301	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q302	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
△Q501	AE009722	T41GK35320	FET	2SK3532-01MR
Q505	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q1000	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1001	AE013032	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q1002	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1003	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1004	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q1005	AE013031	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK
Q1006	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2301	AE008330	TAAA1505SY	TRANSISTOR SILICON	KTA1505S-Y-RTK/P
Q2302	AE008330	TAAA1505SY	TRANSISTOR SILICON	KTA1505S-Y-RTK/P
△Q3200	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3201	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△Q3202	AE004665	TS3M000044	COMPOUND TRANSISTOR	CPH6312-TL-E
△Q3205	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3206	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3601	AE009515	T27T030190	FET	2SK3019_TL
Q3602	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3603	AE009515	T27T030190	FET	2SK3019_TL
Q3604	AE009515	T27T030190	FET	2SK3019_TL
Q3605	AE009515	T27T030190	FET	2SK3019_TL
Q3618	AE009515	T27T030190	FET	2SK3019_TL

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
TRANSISTORS				
△ Q3801	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q3802	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3803	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3804	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△ Q3805	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3808	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
△ Q3809	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q3810	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q4200	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4201	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4205	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4210	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4214	AE012926	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4217	AE013033	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4218	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4224	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4303	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4304	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4305	AE013032	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4306	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4307	AE012951	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4308	AE013032	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4309	AE013010	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4310	AE013011	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q5801	AE009515	T27T030190	FET	2SK3019_TL
Q5802	AE009515	T27T030190	FET	2SK3019_TL
Q7003	AE013048	T27T030180	FET	2SK3018T106
△ Q7004	AE009516	T250A06J30	FET	TK30A06J3(ORION.Q)
△ Q7005	AE009516	T250A06J30	FET	TK30A06J3(ORION.Q)
COILS & TRANSFORMERS				
△ L501	AE009366	029X000121	COIL,LINE FILTER	SS24H-K08240-CH
L503	AE013323	02167E220K	COIL	22 UH
L504	AE013322	02167E100K	COIL	10 UH
L3201	AE013322	02167E100K	COIL	10 UH
L3202	AE009723	0216MG220M	COIL	22 UH
L3601	AE009519	02D1000119	COIL CHOKE	EXC28CG900U
L3602	AE009519	02D1000119	COIL CHOKE	EXC28CG900U
L4204	AE013298	0216SD220J	COIL	22 UH
L4205	AE013298	0216SD220J	COIL	22 UH
L4206	AE013298	0216SD220J	COIL	22 UH
L4207	AE013298	0216SD220J	COIL	22 UH
L7001	AE013322	02167E100K	COIL	10 UH
L8501	AE008874	0216SD2R2J	COIL	2.2 UH
L8502	AE006570	0216SD1R0J	COIL	1 UH
△ T501	AE009724	0481240038	TRANSFORMER,SWITCHING	81240038
△ T7001	AE009521	048135109G	TRANSFORMER,SWITCHING	8135109G
△ T7002	AE009521	048135109G	TRANSFORMER,SWITCHING	8135109G
JACKS				
△ J301	AE009522	060R131024	HEADPHONE JACK	PJ-364H
△ J501	AE009725	064Q1A0011	JACK,AC	CCT2302-0701C
J4206	AE009726	063D100067	SOCKET,21PIN	MRC-021H-02PC(O87)
△ J4208	AE009522	060R131024	HEADPHONE JACK	PJ-364H
J4301	AE009524	060R401140	RCA JACK	RCA-101HT(OR)
J8101	AE009526	062R750007	PLUG	DIN-417HA-01
J8102	AE009527	060R411058	RCA JACK	RCA-341H(NI)-09
J8103	AE009528	060R431039	RCA JACK	RCA-228H(3)NI-02
J8104	AE009529	060R431040	RCA JACK	RCA-341H(2)NI-06
SWITCHES				
SW2201	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2203	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2205	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2207	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
SW2208	AE013551	0504101T34	SWITCH,TACT	EVQ21505R
P.C. BOARD ASSEMBLIES				
PCB130	AE016516	A51K02C130	DVD MT PCB ASS'Y	DMG097A
PCB240	AE016517	A51K02C240	POWER PCB ASS'Y	CEG362A
PCB270	AE016518	A51K02C270	OPERATION PCB ASS'Y	CEG363A
PCB290	AE016519	A51K02C290	TUNER PCB ASS'Y	CEG367A
PCBDA0	AE016520	A51K02CDA0	REMOCON PCB ASS'Y	CEG364A
PCBF40	AE016586	A51K03CF40	MAIN PCB ASS'Y	CMG130A
MISCELLANEOUS				
B101	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20
B303	AE009535	024HC13914	CORE,BEADS	HCB3216KF-391T20
B307	AE009535	024HC13914	CORE,BEADS	HCB3216KF-391T20
B308	AE009535	024HC13914	CORE,BEADS	HCB3216KF-391T20
B501	AE013373	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B801	AE009377	024HC53306	CORE,BEADS	HCB1608KF-330T50
B802	AE008878	024HC51816	CORE,BEADS	HCB1608KF-181T20

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
MISCELLANEOUS				
CP2302	AE009544	069EV5T060	CONNECTOR PCB SIDE	04_6232_105_015_800+
CP2303	AE009545	069EV6T060	CONNECTOR PCB SIDE	04_6232_106_015_800+
CP3601	AE009550	06GDYL3038	CONNECTOR PCB SIDE	1A0300030
CP3801	AE008886	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4300	AE008886	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4302	AE009551	06G7S21501	CONNECTOR PCB SIDE	WD-00021-R
CP5802	AE009741	06GF2G0020	CONNECTOR PCB SIDE	WD-00028-R
CP5803	AE009742	06GF2G0010	CONNECTOR PCB SIDE	WD-00027-R
CP6501	AE009549	069S2M0079	CONNECTOR PCB SIDE	A2006WV0-2X11P
CP7200	AE009548	069S2U0739	CONNECTOR PCB SIDE	A2006WV0-2X15P
CP7601	AE013948	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P
CP8101	AE008882	06977NM020	CONNECTOR PCB SIDE	127301123K2
△ CP8501	AE009553	06GG2E0019	CONNECTOR PCB SIDE	A2001WR-14A
CP8502	AE013951	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CUS151	AE016076	800WFAA006	CUSHION A	
EL2401	AE014351	124116281A	EYE LET	XRY16X28BD
△ F501	AE002112	080NT2R504	FUSE	50T025H
△ F7001	AE004626	083LA05007	FUSE	1206FA5A-T
FH501	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
NR3601	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3602	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3603	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3604	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3605	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR3606	AE016524	11074330M7	R,NETWORK	CRA108330JV
NR7200	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7201	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7202	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7203	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7204	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7205	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7206	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7207	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7211	AE009557	11074470M7	R,NETWORK	CRA108470JV
OS7601	AE008414	077A033001	REMOTE RECEIVER	ROM-V338TAO
SH501	AE009776	126D000045	TERMINAL PIN	YQ-12
△ SP301	AE009558	070Y433004	SPEAKER	S0308F01
△ SP302	AE009558	070Y433004	SPEAKER	S0308F01
SH8501	AE009776	126D000045	TERMINAL PIN	YQ-12
SH8502	AE009776	126D000045	TERMINAL PIN	YQ-12
SH8503	AE009776	126D000045	TERMINAL PIN	YQ-12
SH8504	AE009776	126D000045	TERMINAL PIN	YQ-12
△ TH501	AE009559	DSQDNE5R0L	THERMISTOR	5D2-08LCS
TM101	AE016599	076D0PT020	TRANSMITTER	000-103000600
△ TU5801	AE009748	0163Y03011	RF UNIT	TDTG-S486D
△ V7201	AE009562	09EA119001	LCD	T190PW01_V0
X101	AE009387	100GT01616	CRYSTAL	B16000E011
X801	AE009388	100DT02007	CRYSTAL	DSX840GA
X3602	AE008624	100DT02801	CRYSTAL	SMD-49
X4001	AE009566	100GT02727	CRYSTAL	SMD-49 C27000J029

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
 CE..... ALUMI ELECTROLYTIC CAPACITOR
 CP..... POLYESTER CAPACITOR
 CPP..... POLYPROPYLENE CAPACITOR
 CPL..... PLASTIC CAPACITOR
 CMP..... METAL POLYESTER CAPACITOR
 CMPL..... METAL PLASTIC CAPACITOR
 CMPP..... METAL POLYPROPYLENE CAPACITOR

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