

**SONY®**

3-754-565-22 (1)

LCD Color TV

# FDL-K400

## Operating Instructions

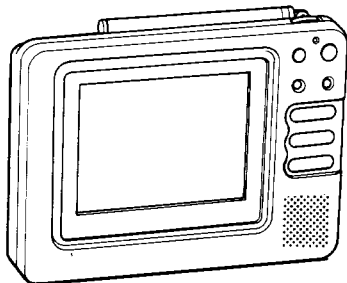
Before operating the unit, please read this manual thoroughly and retain it for future reference.

## Owner's Record

The model and serial numbers are located at the bottom.

Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

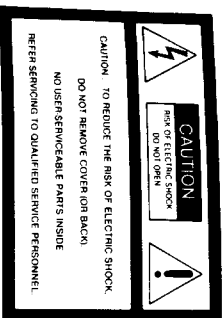
Model No. FDL-K400    Serial No. \_\_\_\_\_



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## Warning

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.**



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820.40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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## Features

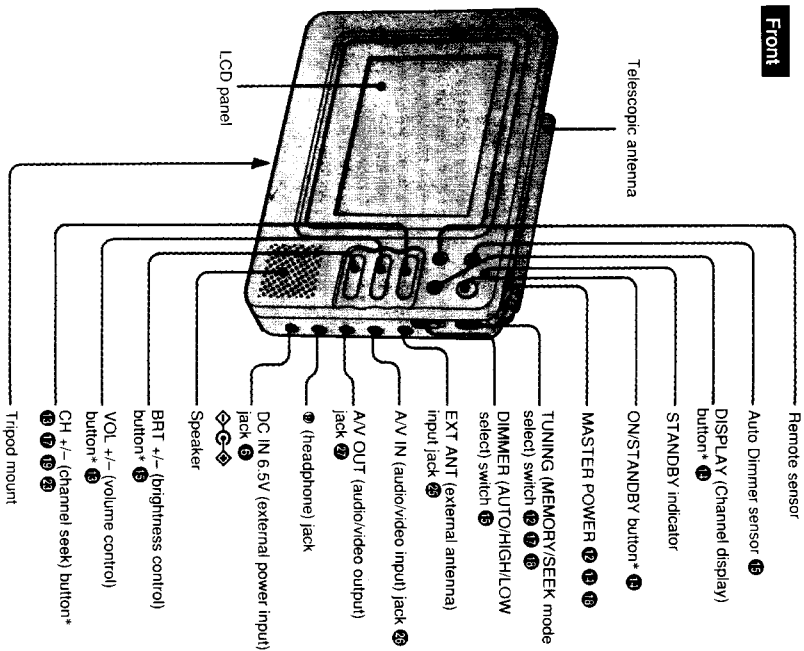
- High quality 4-inch active matrix LCD provides a clear, vivid picture and natural color reproduction.
- Uses long life cool fluorescent backlighting display for bright even light.
- Auto dimmer function adjusts the brightness of the back light automatically depending on the brightness of the surroundings. Manual selection of two levels of brightness is also possible.
- Illuminated control buttons with illumination provide easy access even in a dark room.
- Two types of channel selection methods: memory mode and seek mode.
- The Card Commander can call twelve channels in memory for channel selection with the touch of a button.
- Supplied 5 mm-thin card commander with a key chain hole.
- 4-way AC/DC power supply.
- Power supply options include rechargeable battery pack used for 8 mm camcorder.
- AV input jack for use as a color monitor for video equipment.

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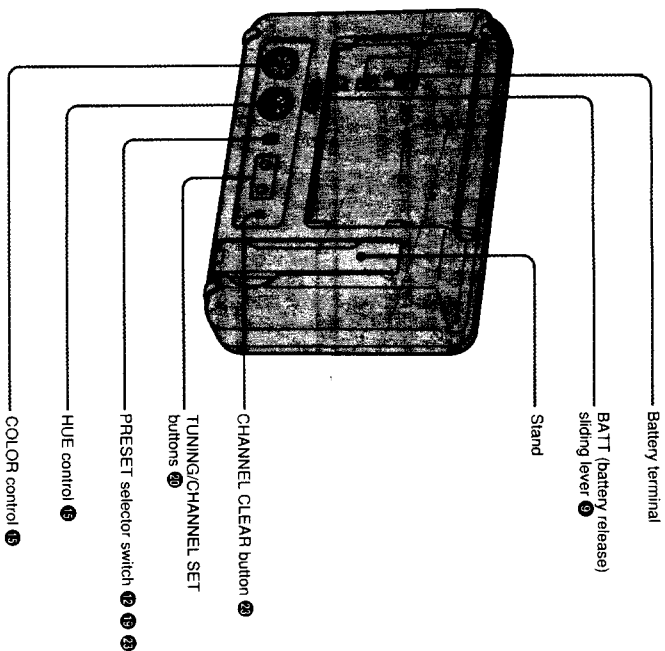
# Parts Identification

Refer to the pages indicated in the circle for details.

## Front



## Rear



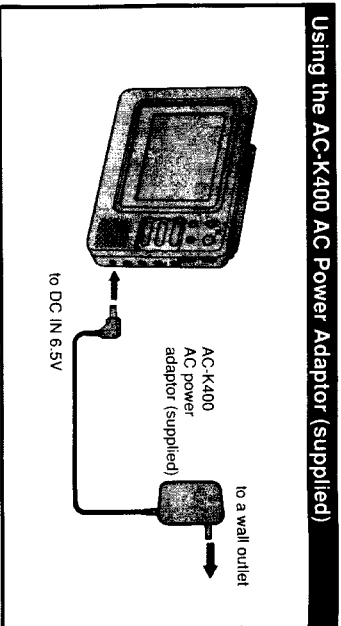
Functions marked with an asterisk can be operated with the Card Commander.

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This TV uses 6.5 V DC power. Use the AC power adaptor (supplied), the rechargeable battery pack, alkaline batteries (with the battery case) or car battery (with the DC pack).

## Using the AC-K400 AC Power Adaptor (supplied)

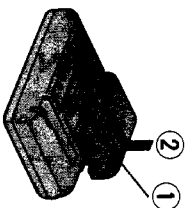


- Use the supplied AC-K400 AC power adaptor only.
- Using other types of adaptors may cause difficulty.
- When connecting the AC power adaptor while the battery pack or the battery case is attached, turn the TV off first. The power source is automatically switched to the AC power adaptor.
- When not using the AC power adaptor, disconnect it from both the wall outlet and the TV.
- When disconnecting the AC power adaptor, do not pull the cord.
- Do not cover the AC power adaptor with a cloth, etc. during use. This may result in deformation of the cabinet or other damage due to a rise in temperature.
- Do not bend the cord forcefully or put it under a heavy object.

Polarity of the plug



## Using the Battery Pack



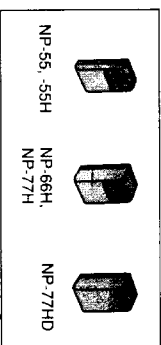
- 1 Attach the battery pack to the TV.
- 2 Align the side of the battery pack with the line on the TV.
- 2 While pressing the battery pack, slide it in the direction of the arrow.

Align the battery straight with the unit to attach. If it is at an angle, damage may occur.

## Usable time

Repeated charging, while some capacity remains, lowers the battery capacity. One refreshing (forced discharging) is recommended for each five charges. The following table shows the battery life of each type of battery pack.

Battery	Usable time
NP-55	Approx. 1 h 10 min.
NP-55H	Approx. 1 h 20 min.
NP-66H	Approx. 2 h 10 min.
NP-77H / 77HD	Approx. 2 h 50 min.



Using Alkaline Batteries

Use the EBP-55 battery case (not supplied) and R6 (size AA) alkaline batteries. Refer also to the instruction manual for the EBP-55.

Attaching the EBP-55 Battery Case to the TV



1 Insert six R6 (size AA) alkaline batteries into the battery case with the polarity positioned correctly.

2 Attach the battery case to the TV.  
1 Align the side of the battery case with the line on the TV.  
2 While pressing the battery case, slide it in the direction of the arrow.

Align the battery case straight with the unit to attach. If it is at an angle, damage may occur.

Battery life

The following table shows the approximate battery life of Sony alkaline batteries when the TV is used continuously. The use time may differ depending on the type of the battery.

Battery Case	Usable time	R6 alkaline batteries
EBP-55	Approx. 1 hours	6

NOTES

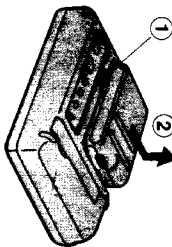
- Do not use manganese batteries. Use alkaline batteries only.
- Use time is shortened greatly in cold climate.
- When the batteries are exhausted, the LCD panel becomes completely blue. Replace all batteries with new ones.

C AUTION

- Improper battery use may cause a leak or rupture. Make sure that:
- the battery polarity is correct.
  - old, new, and different types of batteries are not mixed.
  - alkaline batteries are not rechargeable.
  - when not to be used for a long time, remove the batteries from the battery case.
- When a leak has occurred, wipe the liquid from the battery case before inserting new batteries.

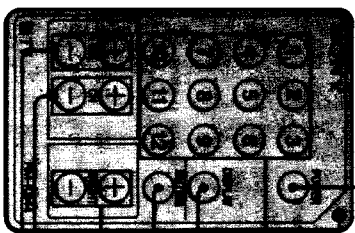
Removing the Battery Pack or the Battery Case

- 1 With the BATT (battery release) lever slid in the direction of the arrow (→).
- 2 remove the battery pack or the battery case.



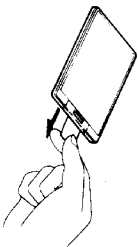
# Operating the Card Commander

## Parts Identification



- POWER button : Press this button to turn the TV on when the TV is in STANDBY mode. Press it again to turn the TV off and set it to STANDBY mode.
  - Key chain hole: A key chain can be attached through the hole to prevent the loss of the commander.
  - Number buttons : Press the buttons to select the channel memory.
  - DISPLAY (channel display) button\*
  - MUTING button
  - BRIGHT +/- (brightness control) buttons\*
  - CH +/- (channel memory up/down/channel seek) buttons\*
  - VOL +/- (volume control) buttons\*
- Buttons marked with an asterisk have the same function as buttons on the TV with the same name. (BRIGHT is the same as BRT)

**A lithium battery has already been inserted. Remove the insulation sheet before use.**



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## How to Replace the Lithium Battery

If the TV does not work by operating the Card Commander, it is time to replace the battery.

<p><b>1 Pull the lithium battery holder out to remove the old one.</b></p>	<p><b>2 Install the new CR2025/BH lithium battery in the battery holder.</b></p> <p>CR2025/BH + side up</p> <ul style="list-style-type: none"> <li>• Wipe the battery well with a dry cloth.</li> <li>• Make sure that the battery polarity is correct.</li> </ul>	<p><b>3 While holding down the battery, replace the battery holder in the Commander.</b></p> <p>Battery holder</p>
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- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short circuit may occur.
- Do not disintegrate, heat up or put the battery into the water. There is danger of rupture. Dispose of it as non-burnable waste.

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# Watching the TV

to be continued

## Before Operating

- Connect the power. Refer to "Power Supply" (page 6) for details.
- Make sure that the TV is in the standard mode as following:

Switch	Position
TUNING (side)	MEMORY
PRESET (rear)	TV

## Watching VHF Channels 2-13

When the TV is shipped, VHF CH2-12 are preset on channel memory 2-12, and VHF CH13 is on channel memory 1.

### 1 Turn the MASTER POWER switch to ON.



When the STANDBY indicator is lit, press the ON/STANDBY button to turn the TV on.

### Information About the Illuminated control buttons

When supplying power through the DC IN 6.5 V (external power input) jack with the AC power adaptor, etc., CH, VOL, and BRT on the control buttons light when the TV is turned on, and the illumination enables easy access in the dark.

When supplying power through the battery terminal on the rear of the TV with the battery pack or the battery case (not supplied) and pressing the DISPLAY button on the TV while it is turned on, control buttons will light for approximately three seconds.

### 2 Select the channel memory (1-12)

for a lower  
numbered  
channel  
memory



for a higher  
numbered  
channel  
memory

Press the CH +/- button



Press the  
number  
buttons on the Card  
Commander.

### 3 Adjust the TV angle by changing the stand angle.

It is best viewed straight on.

### 4 Adjust the direction, angle and length of the telescopic antenna.

### 5 Adjust the volume.

to  
decrease  
volume



to  
increase  
volume



to increase  
volume

to decrease  
volume

To turn off the TV, turn the MASTER POWER switch to OFF.

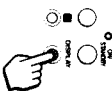


POWER OFF "ON"

To be in **STANDBY mode**, press the ON/STANDBY button or the POWER button on the Card Commander while the TV is on.



To display the **channel number**, press the DISPLAY button while the TV is on. The channel number is displayed for about three seconds.



When using the Card Commander, keep the MASTER POWER switch on the TV unit ON. (When MASTER POWER is turned to OFF, the TV unit does not accept commands from the Card Commander.) Press the POWER button on the Commander to turn the TV on, and press it again to put the TV in STANDBY mode. (The STANDBY indicator goes out when the TV is turned on.)



When not using the TV for a long time, turn the MASTER POWER switch on the TV unit to OFF. The TV consumes partial power in STANDBY mode.

## Adjusting the Picture

**Brightness:** If the brightness of the screen is changed when adjusting the TV angle, adjust it with the BRT +/- button.

to darken to lighten



**Hue:** adjust to set the skin tone

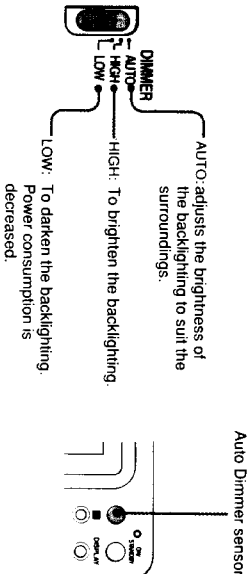


**Color:**



**DIMMER function:**

On this TV, the brightness of the backlighting can be adjusted to suit the brightness of the surroundings. Select the brightness of the backlighting with the DIMMER switch on the side of the TV.





## Watching the TV

### To Mute the TV Sound Temporarily — Muting Function

Pressing the MUTING button on the Card Commander mutes the sound temporarily while the picture remains unaffected.



Muting indicator

MUTE is displayed on the screen while muting.

To restore the sound, press MUTING again, or VOL. + on the TV or the Card Commander.

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## Selecting Channels (Auto Seek Tuning)

While on a trip, this function enables tuning in channels that are not preset (channel memory 1-12), or receivable in that area easily.

### 1 Set the TUNING switch to SEEK.



Seek indicator

Tuning bar  
V: VHF - Green 2-13CH  
U: UHF - Red 14-69CH

### 2 Press the CH +/- button.

The TV automatically seeks the channels available.

To seek lower  
frequency channels



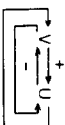
To seek higher  
frequency channels



SEEK indicator stops blinking and lights continuously when the broadcast is tuned in, then it, and the tuning bar disappear after approximately three seconds.



Blinks  
while seeking.



Pressing the CH +/- button repeatedly shifts  
between VHF and UHF.

To display the tuning bar, press the DISPLAY button. It is possible to select a channel with the number buttons on the Card Commander even when the TUNING switch is in the SEEK position. Press the CH +/- button to return the SEEK mode. If the TV is turned off after tuning the channel by the number buttons on the Card Commander, the SEEK indicator will appear on the screen when the TV is turned on again as long as the TUNING switch is set at SEEK.

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How to preset new channels 2-69:

**Example:** Presetting UHF CH 35 on channel memory 2 and indicating channel number 35 when channel memory 2 is selected.

## Preparation

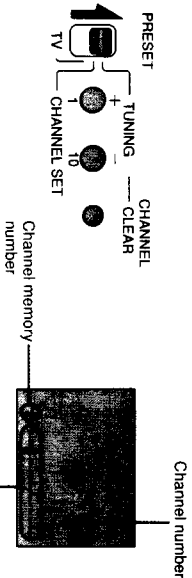
- 1 Turn the **MASTER POWER switch to ON**.  
When **STANDBY** indicator is lit, press the **ON/STANDBY** button.



- 2 Set the **TUNING switch to MEMORY**.



- 3 Set the **PRESET switch on the rear of the TV to TUNING**.  
The **tuning mode screen** appears.



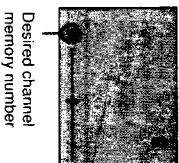
VHF 1 2 13 green  
UHF 14 69 red



Press the **CH +/-** button until the desired channel memory number appears.



Press the desired channel memory number.



Desired channel memory number

## Displaying the channel memory you preset on

Here the desired channel memory number can be changed with the **CH +/-** button or number buttons on the **Card Commander**.

<p><b>Receiving desired broadcast</b></p> <p><b>4</b> Press the TUNING +/- buttons to display the desired UHF 35 CH. (The channel number 35 is not displayed at this time. Determine the channel by the program and the position of the mark on the tuning bar.)</p> <div data-bbox="825 92 960 338"> </div> <div data-bbox="837 346 960 508"> </div> <p>The mark on the tuning bar moves when the TUNING +/- buttons are pressed, and stops when the broadcast is tuned in.</p> <p>The channel indicator stops blinking and lights up when the broadcast is received.</p>	<p><b>Setting the channel number</b></p> <p><b>5</b> Set the PRESET switch to CHANNEL SET.</p> <div data-bbox="517 231 628 508"> </div>
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<p><b>Setting the channel number</b></p> <p><b>6</b> Display 35 (channel number) with the CHANNEL SET buttons 1 (units) or 10 (tens).</p> <div data-bbox="936 831 985 1155"> </div> <div data-bbox="887 1201 1010 1355"> </div> <p>The channel number goes out after approximately three seconds. To display it again, press the CHANNEL SET buttons 1 or 10.</p>	<p><b>Completion</b></p> <p><b>7</b> Reset the PRESET switch to TV.</p> <div data-bbox="603 831 714 1093"> </div> <div data-bbox="591 1139 714 1293"> </div> <p>Now UHF 35 CH will be displayed when the channel indicator is set to 35 with the CH +/- buttons, or when the number button 2 on the Card Commander is pressed.</p>
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## Presetting New Channels on Channel Memory 1-12

When you preset other new channels, repeat the above procedure 2 through 6. Each channel has to be preset individually. Up to twelve channels can be preset.

By using the same procedure, you can change the order of VHF/UHF channels as your preference.

Set the PRESET switch to TUNING to confirm the preset channels. After that reset the PRESET switch to the TV position.

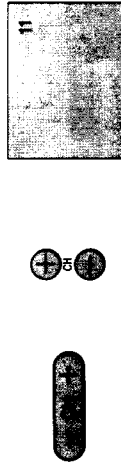
To reset the preset channel to its original position, use the same procedure.

- Only receivable channels can be preset.
- The use of an external antenna is recommended when the reception through the telescopic antenna is unstable. (Regarding the external antenna connection, refer to page 25.)
- The number buttons on the Card Commander refer to the channel memory numbers. Memorized channel numbers in channel memories are displayed when the number buttons are pressed.

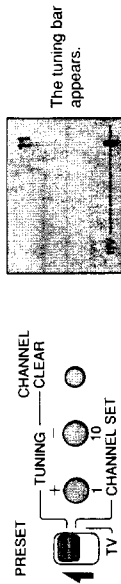
## Erasing Unnecessary Channel Memories

**Example:** Erasing CH 11

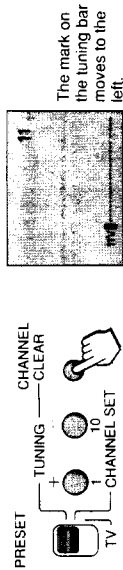
**1 Press the CH +/- button to select CH 11.**



**2 Set the PRESET switch on the rear of the TV to TUNING.**



**3 Press the CHANNEL CLEAR button.**



**4 Reset the PRESET switch to TV.**

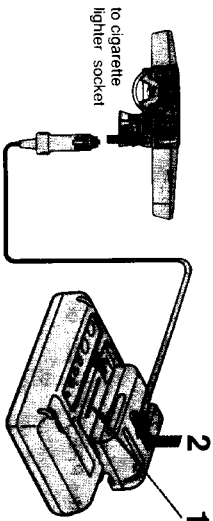
Channel 11 has now been erased. The next time the CH +/- buttons are pressed, this channel will be skipped and the following channel will appear. (With the number buttons on the Card Commander, this channel will not be skipped.)

To display the erased channel again, follow the "Presetting new channels on channel memory 1-12" procedure to re-preset the erased channel.

# Using the TV with a Car Battery

Because it is dangerous, the driver should never operate the TV or watch the screen while driving a car. Do not install the TV in the position where the driver can see it.

The DCP-77 DC pack (for both 12/24V cars, not supplied) is required. Refer to the instruction manual for the DCP-77 for details.



- 1 Align the side of the DC pack with the line on the TV unit.
- 2 While pressing down on the DC pack, slide it in the direction of the arrow.

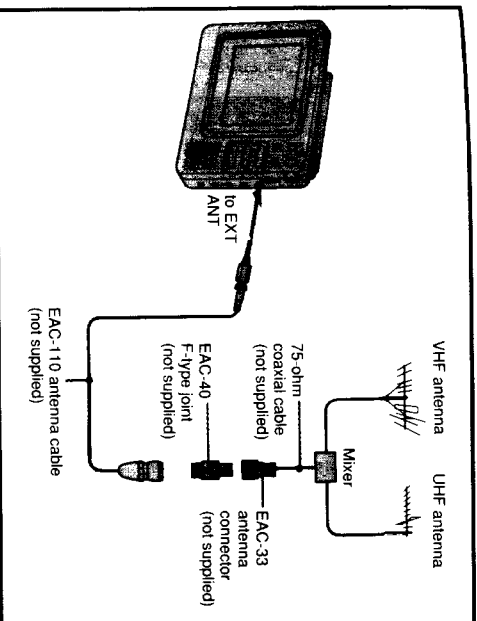
Align the DC pack straight with the TV unit to attach. If it is at an angle, the unit may be broken.

## Caution

- Connect the DCP-77 DC pack to a negatively grounded car only.
- Do not leave the TV in a car with all the windows closed and exposed to direct sunlight. Extremely high temperature may result in damage or deformation. Never install the TV unit in a car permanently.
- The car battery will run down if the TV unit is used for a long time with the car engine stopped. Keep the engine running while the unit is being used.
- Do not forget to pull out the DCP-77's cigarette lighter plug from the cigarette lighter socket when getting out of the car.

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# Connecting the External Antenna



There are many ways to connect an antenna. Consult your Sony dealer for details.

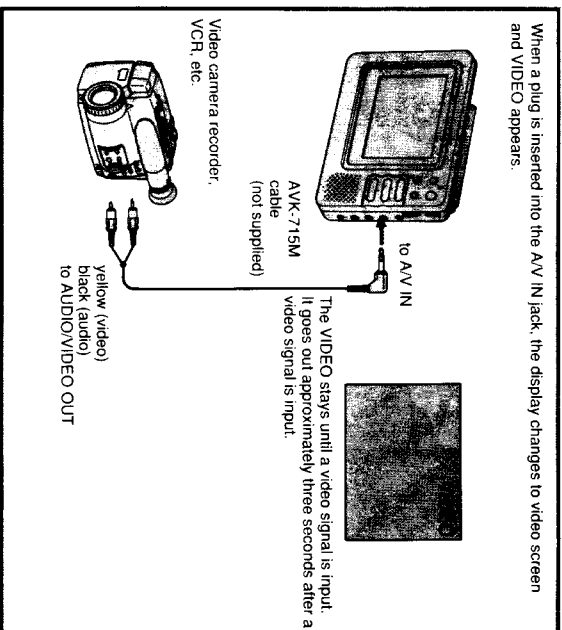
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# Connecting Other Equipment

## Using the TV as a Monitor

This unit can also be used as a compact color monitor for an 8 mm camcorder.

When a plug is inserted into the AV IN jack, the display changes to video screen and VIDEO appears.

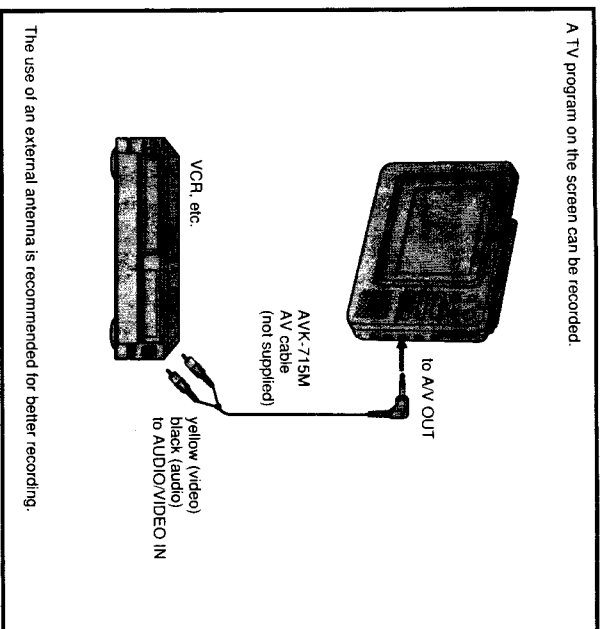


- If the screen is distorted or noise occurs, move the TV away from the VCR.
- The picture may not be stable depending on the equipment (such as a personal computer, etc.).
- Use the AVK-715M connecting cable only.

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## Recording a TV Programme with VCR, etc.

A TV program on the screen can be recorded.



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# Precautions

## On safety

Do not allow liquids, easily burnable objects or metal objects to fall into the unit. Using the unit with such items inside may result in fire, electrical shock, damage or an accident. Make especially sure that there are no foreign bodies in the DC IN 6.5V jack.

## On installation

- Do not place the unit:
- in an excessively hot place exposed to direct sunlight, near a heater or in a car with the windows closed (especially in summer).
- in an extremely cold place.
- in a humid place, such as a bathroom.
- in a place with excessive dust, moisture (rain, etc.), vibration, electric interference or radiation.
- near an AM radio or a tuner as noise may occur.

## On the liquid crystal panel

- Do not press the liquid crystal panel forcibly since this may result in a poor picture and damage to the unit.
- Use the unit within a temperature range of 0°C to 40°C (32°F to 104°F).
- When using the unit in a cold place, double or delayed images may occur but this is not a defect. It will become normal as the temperature rises.

## On built-in lighting equipment

When using the TV in a cold place, the backlighting becomes dark. It will return to normal as the temperature rises.

## On maintenance

Clean the unit with a soft cloth slightly dampened with a mild detergent solution. Never use strong solvents, such as thinner, alcohol or benzene as they might damage the finish.

# Specifications

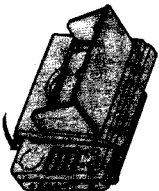
Color system	NTSC	Dimensions	Approx. 152 x 114 x 36 mm (w/h/d) (6 x 4 1/2 x 1 1/8 inches)
Channel coverage	VHF: 2-13 UHF: 14-69	Weight	without projecting parts and controls Approx. 445 g (1 lb oz)
Antenna	VHF/UHF: telescopic antenna	AC-K400 AC power adaptor (supplied)	
Display format	Transmission type TN	Rated input voltage	AC 120 V, 60 Hz
Drive format	liquid crystal panel	Rated output voltage	DC OUT: 6.5 V
Picture	TFT active matrix 4 inches measured diagonally 80.6 x 60.5 mm (3 1/4 x 2 1/2 inches) (w/h)	Rated output current	0.9 A
Number of picture element	105,600 (220 x 480)	Power consumption	Approx. 13 W
Effective picture element ratio	more than 99.99%	Dimensions	Approx. 62 x 52 x 86 mm (w/h/d) (2 1/2 x 2 1/8 x 3 3/8 inches)
Speaker	6 28 mm (1 1/8 inches) (1)	Wire length	without projecting parts and controls Approx. 2 m (6.5 feet)
Input terminal	EXT ANT terminal: mini jack 75 Ω AV IN: mini jack Input impedance audio: 47 kΩ.	Weight	Approx. 500 g (1 lb 2 oz)
Output terminal	500 mVrms video: 75 Ω, 1 Vp-p AV OUT: mini jack Output impedance audio: 1 kΩ	Accessories supplied	AC-K400 AC power adaptor (1) RM-KS44 Card Commander (1) Shading hood (1) Carrying case (1)
Power requirements	8 - 45 Ω	Accessories not supplied	SPK-KS44 TV sports pack VCT-K41 camera mount adaptor Battery pack: NP-55, NP-55H, NP-66H, NP-77H, NP-77HD
Battery life	DC 6.5 V (Refer to "Power Supply") Refer to "Power Supply"	Battery case: EBP-55 DCP-77 car battery DC pack AVK-715M AV cable EAC-33, EAC-40, EAC-110 antenna connector	
Power consumption	Approx. 5.2 W	Design and specifications are subject to change without notice.	
Temperature range	0°C - 40°C (32°F - 104°F)		

## Specifications

### How to Use Accessories

#### Shading Hood (supplied)

Using the shading hood (supplied) reduces a glare and reflected light making the screen easier to see.



## Troubleshooting

If you think you have a problem with this unit, double-check by using the troubleshooting suggestions below.

<b>No picture or sound</b>	<ul style="list-style-type: none"><li>• AC power adaptor is disconnected.</li><li>• When using a battery pack, the AC power adaptor is connected.</li><li>• The battery pack is not charged.</li><li>• The battery polarity is incorrect.</li><li>• The battery pack is used up.</li><li>• The STANDBY indicator is ill.</li></ul>
<b>No color, abnormal color or dark screen</b>	Adjust COL, OR, HUE, DIMMER or BRT properly.
<b>Double images or ghosts appear.</b>	Adjust the antenna.
<b>Dotted lines or stripes appear.</b>	This is often caused by local interference. (e.g. cars, neon signs, hair dryers, etc.) Move the TV away from the local interference.
<b>SLEEP appears but channel indicator does not.</b>	Set the TUNING switch to MEMORY.