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# VIDEO CAMCORDER

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Owner's manual

# Warranty Registration

It is important that you record your RCA Camcorder serial number and other information here, in case you need a complete description for any reason, such as theft. You will find the model and serial numbers on the bottom of the Camcorder. You will also find both numbers recorded on your registration form.

If your dealer did not give you a copy of your Camcorder's registration, contact him promptly and ask for it. If your Camcorder is not registered, we will not be able to contact you should there be a safety inspection, modification or product recall under applicable laws or regulations. Also, you must be able to show your registration or evidence of purchase date to receive warranty parts and service. We suggest you attach your sales slip and warranty registration to this booklet and keep them in a safe place for future reference.

CA Warranty Registration  Control  Con	Purchase Date Dealer Name & Address
Kannes Con ACA Consumer Electronics OO NOT BYAFLE RCs and Con-	Model: CPR250 Serial Number:

# Safety Precautions

Your Video Camcorder AC Adapter/Charger will operate on 120 volts, 60 Hz only and has a polarized plug. Because one blade of the plug is wider than the other, the plug fits in the wall socket only one way. Do not defeat the safety feature of this plug. If you need an extension, use a polarized cord.



CAUTION: To prevent electric shock do not use the polarized plug on this Video Camcorder or AC Adapter/ Charger with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure.

MISE EN GARDE: Pour prévenir les chocs électriques, ne pas utiliser la fiche polarisée de cet appareil avec une rallonge, une prise de courant ou une autre sortie, à moins que les lames ne puissent être insérées à fond sans qu'aucune partie ne soit laissée à découvert.

**CAUTION:** To reduce the risk of electric shock, do not remove the cover or back. No user-serviceable parts are inside. If you spill liquid on the Camcorder disconnect the AC Adapter/Charger power cord to prevent possible fire or shock hazard and consult authorized service personnel. Moisture can damage internal parts. Refer all service to RCA Authorized Video Camera Servicenter or RCA Factory Service Branch personnel only.

CAUTION: Read "Important Safety Instructions for AC Adapter/Charger" on next page before use.

**CAUTION:** Maintain electrical safety. Powerline-operated equipment or accessories connected to this unit should bear the UL listing mark or CSA certification mark on the accessory itself and should not have been modified so as to defeat the safety features. This will help avoid any potential hazard from electric shock or fire. If in doubt, contact qualified service personnel.





The symbol of a lightning flash within a triangle 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 shocks.



An exclamation point within a triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the product.

### IMPORTANT SAFETY INSTRUCTIONS FOR AC ADAPTER/CHARGER

- Before using AC adapter/charger, read all instructions and cautionary markings on (1) AC adapter/charger, (2) battery, and (3) product using battery.
- CAUTION: To reduce risk of injury, charge only rechargeable battery, type CB060/CB120. Other types of batteries may burst, causing personal injury and damage.
- Do not expose charger to moisture of any kind.
- Use of an attachment not recommended or sold by the battery charger manufacturer may result in risk of fire, electric shock, or injury to persons.
- To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
- Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure that:
- Pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
- (2) Extension cord is properly wired and in good electrical condition; and
- 3) Wire size below is met;

Minimum	Length of
AWG size	extension cord (feet)
	Equal to or less
18	than 100
	Equal to or less
16	than 150

- Do not operate charger with damaged cord or plug-replace them immediately.
- Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to qualified serviceman.
- Do not disassemble charger, take it to an RCA Authorized Video Camera Servicenter or RCA Factory Service Company when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.

# Introduction

Congratulations on your choice of an RCA Camcorder. You have selected a precision-engineered product designed to give you years of performance and enjoyment.

Although your Camcorder is very simple to use, it is important that you read and carefully follow the instructions in this guide until you are completely familiar with the proper operating procedures. This manual is arranged in the order that we anticipate you will use it to operate your new Camcorder, and if you follow the instructions one step at a time, you should be able to use your Camcorder like a pro in about an hour. If you should experience a problem, always refer first to the Trouble Checks

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on Page 24. In many cases, a simple

solution is all that's needed; and it

could save you a costly service call.

**BE SURE TO** 

SAVE THESE

**OPERATING** 

for future reference.

**NSTRUCTIONS** 

Should your Camcorder require service

during the warranty period, refer to the

description of what RCA will do and

instructions on how to request service.

back cover of this manual for a

# Features and Functions

# What Your Camcorder Can Do For You

Your RCA Camcorder combines the features of a video camera and a VHS video cassette recorder in one lightweight, easy-to-use unit. As a result, you can now perform all of the following:

- Make your own video home movies. Tape your video memories quickly and easily, with color and sound, on inexpensive VHS cassettes. VHS cassettes are available in your choice of 60 Min. (T-60), 2 Hr. (T-120) and 2 Hr., 40 min. (T-160) lengths. For optimum picture quality, your Camcorder records and plays back tapes exclusively in the VHS Standard Play mode, known as SP.
- Play back tapes immediately through built-in electronic viewfinder. Black & white electronic viewfinder shows exactly what is being recorded during taping-and allows "instant replays" after recording so you can review what you have taped.
- Play back pre-recorded tapes on standard TV or Monitor. Using included cables, you can use your Camcorder to play pre-recorded tapes on any TV. Adapters are included for use with either a standard TV or a Video Monitor. (Tapes must have been recorded in SP speed.)

- Shutter Speed Control. You can choose from four higher shutter speeds for recording fast-moving outdoor sporting events.
- Choose Automatic or Manual Shutter Speed Control. You can let the Camcorder automatically control the shutter speed for you or choose from four higher shutter speeds for recording outdoor sporting events or fast-moving family action.
- Record from another VCR or Monitor. With an optional adapter, you can hookup your Camcorder to another VCR or Monitor and use the Camcorder to record TV shows or copy your home tapes.
- Use your Camcorder on AC or DC power. Included with your Camcorder is an AC Adapter/Charger and a Rechargeable Battery. With the AC adapter/charger attached, you can power the Camcorder from the nearest AC outlet. With the charged battery attached, you can use your Camcorder virtually anywhere for up to one hour. With an optional 12-volt DC cord, you can even power the Camcorder from your car's cigarette lighter socket.
- Create professional-looking video productions. Your Camcorder has the latest convenient features to make your videotaping as trouble-free and enjoyable as possible. You can zoom in or out at the touch of a button, The Camcorder will adjust focus automatically so you don't have to bother. You can easily fade in and out of a scene with the Auto Iris Control. A "quick review" button lets you double check recording results and set up your next scene. What's more, a date display lets you record the date on your home tapes. For quick scene location, both visual search and a viewfinder tape counter are provided. There's even a viewfinder adjustment that makes it easy to use the Camcorder if you wear eyeglasses.
- Add optional accessories for greater creative versatility. RCA offers a full line of compatible accessories for your Camcorder to increase your creative range when making video productions. Some optional accessories are shown on pages 22 and 23.

# **RCA Video Cassettes**

Note: To insert and remove a cassette, be sure to connect the power source to your Camcorder,

#### Video Cassettes

RCA recommends that RCA cassettes be used with this unit. The tape in these cassettes is of high-quality formulation. It has been manufactured to RCA's critical specifications, for excellent performance. Use of tape not meeting these specifications could considerably reduce the performance of your Camcorder.

Use of poor quality tapes or tapes that have been damaged or mishandled can contaminate the video heads, resulting in a snowy picture or no picture at all during playback. Because RCA has no control over the type of tape purchased or rented by consumers, head cleaning is not covered by RCA's warranty. It is considered normal maintenance.

Playing a new RCA tape for approximately 15 minutes will often satisfactorily clean the heads and improve your picture. If a snowy picture or no-picture condition persists, consider the use of a chemical nonabrasive head cleaning tape (RCA Stock No. AV009W) available from your dealer or many electronic supply stores.

#### **Erase Protection**

To prevent accidental erasure of recorded material, remove the safety tab from the back of the cassette as shown below. Recording is impossible when this tab is removed. To record again on a cassette that has the tab removed, simply cover the safety-tab hole with vinyl tape as shown.



### **Recording Time**

The Camcorder records and plays back in VHS standard speed (SP). Listed below are the maximum SP recording times for popular RCA VHS cassettes.

CASSETTE	RECORDING TIME
T-60	60 Min.
T-120	2 Hrs.
T-160	2 Hrs., 40 Min.

#### To insert or remove cassettes:

CAUTION: Insert cassette only one way with safety tab facing up and tape windows facing out.





(2) Insert or remove (

Close cassette compartment.

# Preparations for Use





### Unpacking Your Camcorder

Since you are reading this manual, you have obviously opened your Camcorder's packing box and have probably already unpacked most of the items. Once you've removed the packing materials, *the first thing you should do* is make sure you have everything you need. In the Camcorder's box, you should find the following items:

- 1. the Camcorder itself;
- 2. an AC adapter/charger;
- 3. a rechargeable battery pack;
- 4. an RF adapter;
- 5. an audio/video adapter cable;
- 6. an earphone;
- 7. a shoulder strap;
- 8. a coaxial RF cable;
- 9. a 300/75-ohm transformer.

If any of these items are missing or appear damaged, contact your RCA dealer immediately. Also, you should save all of the packing materials; they will come in handy in the event you have to store or ship the Camcorder. In preparing your Camcorder for initial use, you will need only the Camcorder, the AC adapter/charger and the battery. Put the other items aside for now. We will discuss their use later in this guide.

#### Quick Operation Steps for Experienced Users

If you've used a video camera and VCR before, you can probably get your Camcorder up and running quickly by using the following steps:

- Ia. For AC operation, attach the AC adapter/charger (see Page 10) and plug it into an AC outlet.
- 1b. For battery operation, you will have to first attach the battery to the AC adapter/charger and charge the battery. This procedure is described on Page 9. (The battery takes about one hour to fully charge. While you are waiting, why not read the rest of the manual.) After the battery is charged, attach it to the Camcorder, following the directions on Page 9.
- 2. Set the MAN/AUTO FOCUS switch to AUTO; set the NORMAL/SHUTTER switch to NORMAL and put the AUTO IRIS control in the center position (AUTO).
- 3. Slide the Camcorder's POWER switch to the ON position, and you are ready to go. Remember the Camcorder uses standard VHS cassettes and records exclusively at the SP speed. After inserting a cassette, place the CAMERA/ PLAYBACK switch in the CAMERA position for recording, and in PLAYBACK position for playback through the viewfinder. The thumb trigger control switches you from Record to Pause with a single touch when in CAMERA mode.
- 4. After using the Camcorder for the first time, be sure to read the rest of the manual for full details of its features, accessories, and proper care.

# Location and Use of Controls



### **Camcorder Operating Controls** and Their Functions

Pages 5 through 8 tell you where the Camcorder controls are located and what they do. As you read the description of each control, find that control on your own Camcorder to familiarize yourself with its location.

#### (1) Accessory Shoe

This fitting is used to attach a light or other lightweight video accessories to your Camcorder.

CAUTION: Excessive heat from a light could cause damage to the Camcorder's case. Use of a light is not recommended.

#### (2) Electronic Viewfinder (EVF)

The electronic viewfinder displays what the Camcorder lens sees. The electronic viewfinder also functions as a convenient black & white monitor during playback of recorded video.

#### 3 Microphone

The microphone is mounted on the Electronic Viewfinder near the front of the Camcorder and is more sensitive to sounds coming from the direction in which the lens is pointed.

#### (4) Lens

Your Camcorder is equipped with an fl.6, 6:1 power zoom lens which directs incoming light to the solid state MOS image sensor.

#### 5) Auto Focus Window

To automatically focus the camera lens, this window transmits and receives infrared light which is reflected off the subject. Make sure you don't obstruct this window when recording.

 NORMAL/SHUTTER Switch Set this switch to the NORMAL position for normal use. Set this switch to the SHUTTER position when you wish to control the shutter speed with the SHUTTER SPEED Button (7). Details are on page 14.

#### (7) SHUTTER SPEED Button

This button lets you select four additional shutter speeds when the NORMAL/SHUTTER Switch (6) is in the SHUTTER position. The shutter speed is displayed in the electronic viewfinder. A blinking shutter speeds indicates you need more light. Details are on page 14.

8 Eyepiece Focus Control Use this control to adjust viewfinder focus. These adjustments will not affect the focus of the image recorded by the Camcorder. This control permits most users who wear glasses to remove them while focusing the Camcorder.

It's easiest to set the correct focus by focusing on the viewfinder onscreen displays (such as the date, battery level, etc.).

**BAT** (Battery) Eject Lever Slide this lever Down to release the battery or the AC adapter/charger from the Camcorder.



- POWER FOCUS Buttons (◄►) Pressing these buttons will change the focus of the lens when the Camcorder is in the Manual Focus mode (MAN/AUTO FOCUS Switch (17) in the MAN position.)
- (11) Power Zoom Buttons (W and T) These buttons control the Camcorder's power zoom motor. Press the button labeled W and the zoom lens will move in the Wide Angle direction. Press the button labeled T and the zoom lens will move in the Telephoto (close-up) direction. When you grasp the Camcorder properly using the hand strap, the zoom buttons are easily controlled by your index and middle fingers.

#### (12) AUTO/PUSH Focus Switch

When this switch is depressed and held in, automatic focus is activated and remains activated until the switch is released. This is useful if you are shooting a relatively static scene in MANUAL FOCUS and need to adjust for a change in scene by using AUTO FOCUS quickly and momentarily.

#### (13) AUTO IRIS Control

With this control in the center position, the Camcorder automatically adjusts the lens opening for the best picture. The lens iris opening can also be manually adjusted to compensate for unusual lighting. When the subject is in bright light and the background is dark, turn this control counterclockwise to close the lens iris opening. When the background is in bright light and the subject appears too dark, adjust the control clockwise to open the lens iris. This control can also be used to easily fade in and out of scenes. Details are on page 14.

#### (14) MACRO Button

For shots as close as 3/8 inch from your subject, press and hold the Power Zoom Button "W" down while pushing in and holding the MACRO Button. After putting the Camcorder in the Macro Mode, press the Power Zoom Button "W" or "T" until sharp focus is achieved. Details are on page 15. Press and hold the "T" zoom button to return to normal operation.

#### (15) DATE Set Buttons (SHIFT and CHARACTER) These buttons are used to enter

the current date in your Camcorder so they can be recorded on your tapes for future reference. Details are on page 13.

#### (16) **REVIEW** Button

Press the *REVIEW* button while the Camcorder is in the Record/ Pause mode to view the last four seconds of a completed recording segment. Details are on page 12.

#### (17) MAN (MANUAL)/AUTO FOCUS Switch

Set this switch to the AUTO position for automatic focus, and to the MAN position when you wish to use the *POWER FOCUS* Buttons (10). Details are on page 15.

Continued on next page.

# Location and Use of Controls, Cont'd.



- 12-volt DC Power Cord Jack This jack lets you operate your Camcorder from the cigarette lighter socket of a car (using the optional DCC012 power cord) or any other suitable 12-volt DC source.
- (19) Power Connector/Connector Cover This connector is used to attach the battery or the AC adapter/ charger. The connector cover protects the power connector from damage and should be in the Up position at all times.

#### (20) A V OUT (Audio/Video Output) Connection

Connect the supplied audio/video connector cable or RF adapter to this jack, and the video being recorded or played back on the Camcorder can be displayed on your TV or Monitor, or even recorded on another VCR. The RF adapter connects the Camcorder to the standard antenna of a TV. The audio/video cable connects the Camcorder to the direct inputs of a video monitor or VCR.

#### (21) EAR (Earphone) Jack

You can plug the supplied earphone into this jack for private monitoring of audio during recording or playback.

#### (22) TRACKING Control

When playing prerecorded tapes or tapes recorded on other VHS video recorders, black or white streaks may appear on your TV or display monitor screen. Turn the *TRACKING* control slowly in either direction until the streaks disappear. The *TRACKING* control has no effect during recording.

- 3 Record Start/Stop Button This thumb control is used to change the Camcorder from Pause to Record and vice versa. With the Camcorder in the CAMERA Mode, push this button and the graphic "REC" will appear in the viewfinder. (This graphic appears whenever the Camcorder is recording.) Press this button again and the Camcorder will enter the Pause Mode. It is not necessary to hold down the Record Start/Stop Button while recording.
- (24) Hand Strap

This strap is designed to provide comfort and ease of operation while using the Camcorder. The strap is adjustable for a personalized fit.

(25) VIEWFINDER/AV INPUT (Viewfinder Connection) (Audio/ Video Input)

The viewfinder cable plugs into this connection linking it with the Camcorder's audio/video circuitry. You can also disconnect the viewfinder and attach the optional VAA002 audio/video input adapter to this connection, allowing Camcorder recording of external audio and video from VCRs, component tuners and other devices. The optional CGA020 or CGA030 Character Generator/Titler also uses this jack.

(26) External Microphone Jack If you wish to use an optional external microphone during recording, plug it into this jack. When an external microphone is connected, the Camcorder's builtin microphone automatically is shut off.

 (27) Cassette Door This door can be opened for cassette insertion or removal whenever the Camcorder is attached to a power source. To open the cassette door, press the *EJECT* button (34) on the Camcorder's top control panel. Insert a standard VHS cassette and close the door by hand.

CAUTION: When the battery reaches its empty level during use, the Camcorder will shut off. When this occurs there will normally be enough power left in the battery to eject the tape. If not, do not attempt to force the cassette door open. This will damage your Camcorder. To remove the cassette, simply power your Camcorder with the AC Adapter/Charger or recharge the battery before attempting to eject the tape.



#### (28) DISPLAY Button

This button controls the graphics that appear in the Electronic Viewfinder. When the CAMERA/ PLAYBACK Switch (33) is in the PLAYBACK position, pressing this button causes the Battery Level Indicator and tape counter to appear. Press again to remove the graphics.

When the CAMERA/PLAYBACK Switch (33) is in the CAMERA position, pressing this button causes the date display to appear. Press again to display the battery level indicator and tape display. Press again to remove all graphics.

#### (29) Tape Counter RESET Button

When the tape counter is displayed in the viewfinder, pressing this button resets the counter to "0000". Details are on page 13.

#### (30) REWIND **44** Button

Press to rewind a tape after either recording or playback when the Camcorder is in the STOP Mode.

When the Camcorder is in the *PLAYBACK* Mode, this Button becomes the Reverse Search Button. Press and hold this button to visually scan your tape in reverse. To return to normal playback, release the *REWIND* ◄ Button.

#### (31) F.FWD ►► (Fast Forward) Button Press this button while the Camcorder is in the STOP Mode to rapidly advance the tape in the forward direction.

When the Camcorder is in the *PLAYBACK* Mode, this button becomes the Forward Search Button. Press and hold to visually scan your tape forward. To return to normal playback, release the *F.FWD*  $\blacktriangleright \bullet$  Button.

#### (32) PAUSE Button

Press this button during playback to display a still picture on the viewfinder. Press again to return to normal play. During recording, a thumb trigger control activates the Pause function.

#### (33) CAMERA/PLAYBACK Switch Place this switch in the CAMERA position to put the Camcorder in the Record/Pause Mode for recording.

Place this switch in the *PLAYBACK* position for viewing tapes.

### 34) Tape EJECT Button

Press this button to open the cassette door for tape insertion or removal. The Camcorder must be attached to a power source in order to load or remove a cassette.



#### Power and Dew Indicator

This light glows whenever the Camcorder is turned on. Blinking of the power light indicates excessive moisture in your Camcorder, and an internal protection feature will prevent the unit from operating until the moisture is gone. Leave the power on, and when the light stops blinking, the unit can be operated.

#### (36) POWER Switch

This switch turns the Camcorder's power on and off.

#### (37) STOP Button

The STOP button is used to stop playback, rewind, and fast forward operations. This button has no effect during recording.

#### (38) PLAY Button

With the CAMERA/PLAYBACK switch in the PLAYBACK position, press the PLAY button to play back recorded material.

# **Basic Operation: Power Supplies**

#### How to Power Your – Camcorder

Your Camcorder is designed to be used with any of three different power sources. When videotaping in locations away from conventional AC power sources, you may power your Camcorder by using the battery, or power it from the cigarette lighter socket in your car with RCA's optional DCC012 DC car cord. The Camcorder may also be powered by household current (120 volts, 60 Hz only) when using the supplied AC adapter/charger.

CAUTION: Do not attempt to use a "power converter" to use your AC Adapter/Charger on a power source other than 120 volts, 60 Hz or the Adapter/Charger may be damaged. If you plan to travel to a foreign country that does not use 120 volt, 60 Hz power, an optional CPS04 Adapter/Charger may be purchased from your RCA dealer. The CPS04 is designed for use on 100-240 volts, 50/60 Hz.

These two pages will tell you how to charge and attach the battery to your Camcorder as well as how to power the Camcorder from AC power or from the cigarette lighter socket of a car.



### -Charging Your Battery -



CAUTION: When a battery is attached, do not turn the AC adapter/charger upside down, even if the adapter/charger is attached to the Camcorder. The battery may fall off and be damaged. It could also cause injury.

Recharging the Camcorder's standard battery takes approximately 1 hour, depending on the battery's condition. After repeated charging and use, operation time will gradually decrease. When operation time becomes too short to be useful, it's time to replace the battery.





Whenever the tape counter display is present in the viewfinder, it appears with a 3-dash read-out indicating the approximate status of Camcorder battery power. When the battery is fully charged, the display reads "E---F". After several minutes, only two dashes appear. When the battery is very near empty, only one dash remains. When the last dash starts blinking, you should find an When fully charged, your Camcorder battery should supply about 1 hour of operating time. The battery is charged using the procedure below:

- 1) Attach the battery to the AC adapter/charger as shown at the right. Align the reference notches on the battery with the notches on the back of the AC adapter/charger. Then push the battery flush with the adapter and slide it downward.
- 2 Plug the AC adapter/charger into the nearest AC outlet (120 volts, 60 Hz).
- (3) Push the CHARGE button in. The Charge Indicator will light while the battery is being charged. When the light goes out, the battery is fully charged.
- (4) Remove the battery from the AC adapter/charger by sliding the battery up and off.
- (5) Attach your charged battery to the Camcorder as shown on the left.

NOTE: The AC adapter/charger may be attached to the Camcorder during battery charging, but you cannot charge the battery and operate the Camcorder from the AC adapter/charger at the same time. When all three components are connected, the AC adapter/charger's CHARGE Button determines where power will be directed.

alternative power source or recharge the battery before continuing to use your Camcorder.

CAUTION: When the battery reaches its empty level during use, the Camcorder will shut off. However, the battery should have enough reserve power to eject the cassette when you press the *EJECT* Button. If the Camcorder does not eject the cassette when you press *EJECT*, do not attempt to force the cassette door open. This will damage your Camcorder. To remove the cassette, simply power your Camcorder with the AC adapter/ charger or recharge the battery before attempting to eject the tape.

#### -Using the AC Adapter/Chargerto Power Your Camcorder



#### -Using the Optional DC Car Cordto Power Your Camcorder



To power your Camcorder from a car's 12-volt electrical system, you will need RCA's optional DCC012 DC car cord. The proper steps for using the Camcorder with the DC car cord are outlined below.

- (1) Connect the small plug on the DC car cord to the DC IN 12V Power Cord jack on the back of the Camcorder.
- 2) Insert the other end of the DC car cord into the vehicle's cigarette lighter socket.

3) Slide the Camcorder's POWER Switch to ON. If the car cord is properly connected, the Power Indicator should light. Your car's ignition does not have to be turned on for Camcorder operation. CAUTION: The DCC012 DC car cord is designed to be used only with automobiles having 12-volt negative ground electrical systems.

WARNING: To avoid possible damage to Camcorder, make sure the car cord you plan to use has positive tip polarity such as RCA model DCC012 and is used with a 12-volt negative ground electrical system.

# **Basic Operation: Recording**

### How to Record with Your Camcorder

After you have your Camcorder connected to a power source (AC adapter/charger, battery, or DC cord), use the following steps to make a recording. Electronic REWIND Button Viewfinder **POWER Switch** Electronic Camcorder Status Vlewfinder CAMERA/PLAYBACK **Graphic Display** Switch REC **Eyepiece Focus** Control EJECT Button 0 AUTO IRIS. ПСЛ RCA Control MAN/AUTO FOCUS Switch 0 50 6 **REVIEW Button Record Start/Stop Button Power Supply** (AC Adapter/Charger, NORMAL/SHUTTER **Battery or Optional** DC Car Cord) Switch

- 1 Slide the Camcorder's POWER Switch to the ON position. The Power Indicator Light should come on.
- 2 Put the Camcorder's CAMERA/ PLAYBACK Switch in the CAMERA position.
- 3 Set the MAN/AUTO FOCUS Switch to AUTO; set the AUTO IRIS Control to the center (AUTO) position; set the NORMAL/ SHUTTER Switch to NORMAL.
- 4 Press the Camcorder's *EJECT* button, insert a VHS cassette and close the cassette door.
- (5) Put your eye to the Camcorder viewfinder and select a scene you wish to record. Don't forget to adjust the Eyepiece Focus Control for your vision.
- 6 Press the Record Start/Stop button to begin recording. The graphic "*REC*" will appear in the Electronic viewfinder. (It is not necessary to hold down the Record Start/Stop button.)

- Press the Record Start/Stop button again to stop recording and enter the Pause mode. The status graphic "REC" displayed in the Electronic Viewfinder will disappear. Press the REVIEW button to review the last four seconds of recorded material. Pressing the Record Start/Stop Button again will activate the Record mode.
- (8) After you have completed taping your subject, put the CAMERA/ PLAYBACK switch in the PLAYBACK position and rewind the cassette, by pressing the REWIND Button. If you do not wish to play your recording back on your Camcorder, press the EJECT button and remove the cassette.

### CAUTION

NEVER attempt to force open the cassette door. If the battery reaches its empty level during recording, the Camcorder will shut off. Normally there will be enough power left in the battery to eject the tape. If not, simply recharge the battery or power your Camcorder with the AC Adapter/Charger before attempting to eject the tape.

### Using Your Camcorder's Special Recording Features

The steps listed above give you the basics of activating Camcorder recording. However, you should also get to know the Camcorder's special features on pages 12-15. These features can help you shoot like a pro even if you've never used a video camera or recorder before.

# **Recording** Features



(such as date, battery level, etc.). The Eyepiece Focus Control does not affect the focus of the image actually recorded by your

Camcorder.

## Battery Level Indicator Battery Level Indicator E ... F 0000 Tape Counter Display

Battery level indicator: A battery level graphic appears whenever the tape counter display is present in the viewfinder.

When the battery is fully charged, the display reads "E---F". After several minutes, only two dashes appear. When the battery is near empty, only one dash remains. When the last dash blinks, you should find an alternative power source or recharge the battery before continuing to use the Camcorder.

Note: When the battery is near empty during recording and the battery level graphic is not displayed in the viewfinder, an "E" blinks to warn you.

### CAUTION

NEVER attempt to force open the cassette door. If the battery reaches its empty level during recording, the Camcorder will shut off. Normally there will be enough power left in the battery to eject the tape. If not, simply recharge the battery or power your Camcorder with the AC Adapter/Charger before attempting to eject the tape.

# Recording Features, Cont'd.

### -Tape Counter and Display—



When the CAMERA/PLAYBACK Switch is set in the PLAYBACK position, pressing the DISPLAY button on the Camcorder's top control panel causes a 4-digit counter display to appear in the viewfinder along with the battery level graphic as shown above.

When the CAMERA/PLAYBACK Switch is set in the CAMERA position, pressing the DISPLAY Button twice causes the Tape Counter and Battery Level graphics to appear in the viewfinder.

The tape counter acts as a handy reference to help you locate taped segments.

Press the *RESET* Button to set the counter to 0000 before starting to record or play. Note the number on the tape counter at the beginning and end of each program you want to record. This will allow you to use the counter to locate desired programs.

To remove the Tape Counter and Battery Level. Indicators display from the viewfinder, press the DISPLAY Button again.

#### Memory Stop feature:

The tape counter also includes a Memory Stop feature. When the tape counter is displayed, the tape automatically stops when the counter reads "0000" during Fast Forward and Reverse.

This is useful if there is a section of tape you want to review immediately after recording, or if you want to return to the same point several times in a row.

To use the counter memory:

- Reset the counter to "0000" when you reach the point on a tape you wish to index.
- Continue to play or record the tape, and when you wish to return to the index point, simply press *REWIND*.

**Note:** CAMERA/PLAYBACK switch must be in *PLAYBACK* position.

### -Setting and Recording the Date-

The date can be set and recorded on your tapes to act as a handy reference when viewing them at a later time.

The date graphic will be recorded on your tape whenever it appears in the Electronic Viewfinder and the Camcorder is in the Record Mode.

- Set the current date as explained below.
- Display the date graphics in the Electronic Viewfinder when you begin recording.

### Setting the Date:

- 1 Attach a power source to your Camcorder and turn it on by sliding the *POWER* Switch to *ON*.
- (2) Place the CAMERA/ PLAYBACK Switch in the CAMERA position.



#### Top of Camcorder

3 Press the DISPLAY Button shown above located on the top of your Camcorder. The date graphics shown below will be displayed in the viewfinder.



date



#### Side of Camcorder

(4) Press the CHARACTER button located on the side of your Camcorder until the correct month appears. Release CHARACTER and press the SHIFT button. Note: If a character is not blinking, push *SHIFT* button and then press *CHARACTER* button to change blinking character.

- (5) Repeat Step 4 to set the correct day and year.
- (6) Press the DISPLAY Button twice to remove all display graphics from the viewfinder.

Note: Pressing the DISPLAY Button once causes the Tape Counter and Battery Level Graphics to appear in the viewfinder.

### **Correcting the Date:**

To correct the date after it has been set:

- Press the SHIFT Button until the incorrect month, day or year is flashing.
- Press the CHARACTER Button until the correct month, day or year appears in the display, and then press SHIFT Button.

### **Recording the Date:**

The date is automatically recorded on your tape whenever you record while the Date Graphic Display appears in the Electronic Viewfinder.

- Place the CAMERA/PLAYBACK Switch in the CAMERA position and press the DISPLAY Button on the top of your Camcorder. Set the current date, using the above procedure, if necessary.
- When the current date is set and appears in the graphic display of the Electronic Viewfinder, begin recording.

To remove all display graphics from the Electronic Viewfinder, press the *DISPLAY* Button on the top of the Camcorder twice. Pressing it once causes the Tape Counter and Battery Level Indicators to appear.

Note: Your Camcorder will continue to keep the correct date in memory for approximately 4 hours after the Camcorder's power has been turned off.



### NORMAL/SHUTTER Switch and SHUTTER SPEED Button-

This feature allows you to select four higher shutter speeds to record fast moving action.

When the NORMAL/SHUTTER Switch is in the NORMAL position, the Camcorder's shutter speed is automatically set at 1/60 second. This speed is recommended for indoor videos and most of your recording.

When the NORMAL/SHUTTER Switch is in the SHUTTER position, you can select four additional shutter speeds (1/120, 1/250, 1/1000 and 1/2000) using the SHUTTER SPEED Button.

When the NORMAL/SHUTTER Switch is in the SHUTTER position, the shutter speed of 1/120 second is selected. Every time you push the SHUTTER SPEED Button, the shutter speed will increase.

To display the shutter speed graphic, press the *DISPLAY* Button to erase Battery Level Indicator and Date displays.

The display below will appear in the electronic viewfinder when the NORMAL/SHUTTER Switch is in the SHUTTER position.

Viewfinder Display



The higher shutter speed you have selected (1/120, 1/250, 1/1000, 1/2000) will appear in the Electronic Viewfinder.

(No speed will be displayed when the NORMAL/SHUTTER Switch is in NORMAL.)

Note: Higher shutter speeds require more light. The shutter speed display graphic (1/120, 1/250, 1/1000, or 1/2000) will flash when you need more light.

The higher shutter speeds are only recommended when you are taping an outdoor sporting event that you plan to view in slow motion or stop action on a good-quality home VCR that features "field-still" special effects (3-, 4-, or 5-head VCR's).

A tape recorded at the higher shutter speeds may not show movement and change of scenes as smoothly as recordings at the NORMAL (1/60) Shutter Speed. When recording at high shutter speeds, use of fluorescent, mercury vapor or sodium lighting may cause a "flickering" effect.

### -AUTO IRIS Control-

With the AUTO IRIS Control in the center (AUTO) position, your Camcorder electronically senses the available light in a scene and automatically opens or closes the lens iris for the best possible recording. However, you also have the option of manually opening or closing the AUTO IRIS control to compensate for unusual lighting.

Typical situations in which you might want to change the AUTO IRIS setting are:

- When your subject appears too dark in front of a bright background (for example, a person standing in front of a window). In this case, turn the AUTO IRIS Control clockwise to make the subject brighter.
- When the subject is in bright light and the background is dark, turn the AUTO IRIS Control counterclockwise to make the subject darker.

You can also use the AUTO IRIS control to "fade" in or out of a scene. Simply turn the AUTO IRIS control counterclockwise to fade out, and turn it back to AUTO to fade in.

#### -Color Balance-

Your Camcorder is equipped with an automatic color balance system which maintains proper color balance continuously.

# **Recording Features, Cont'd.**



#### - Focusing Your Camcorder

• Auto Focus: Set the MAN/AUTO FOCUS Switch to the AUTO position for automatic focus operation.

Note: The Camcorder's Auto Focus system uses infrared light and will focus on the nearest object that reflects this light. The following cautions should be observed when using Auto Focus:

- (1) Sloping or inclined surfaces may not be focused because the reflected light will not be returned to the Auto Focus window.
- (2) When shooting through a window, the Auto Focus system may focus on the window glass instead of your subject.
- (3) Dark objects, such as a subject's clothing may absorb the infrared light. Manual Focus may be required.
- (4) If any of the above conditions exist, put the MAN/AUTO FOCUS switch in the MAN (Manual) position and use manual focusing. Auto Focus may not work reliably on subjects more than approximately 35 feet away from the Camcorder.
- Manual Focus: For manual focusing, set the MAN/AUTO Focus Switch to the MAN position. Then, before you start recording, zoom in on your subject using the

Power Zoom Button "T" (Telephoto) and adjust the POWER FOCUS Button  $\triangleleft$  or  $\triangleright$ so that a sharp, clear picture is displayed in the viewfinder. By using this procedure for manual focus, the camera will maintain proper focus when the power zoom is returned to the wide-angle position.

You can also quickly and momentarily switch from MANUAL to AUTO FOCUS by pushing the AUTO/PUSH Focus Switch in. When the switch is held in this position, automatic focus is activated and remains activated until the switch is released. This is useful if you are shooting a relatively static scene in MANUAL FOCUS and need to quickly and momentarily use AUTO FOCUS to adjust for a change in scene.

• Macro Focus: For shots as close as 3/8 inch from your subject, first place the MAN/AUTO FOCUS Switch in the MAN position. Press the MACRO Button and hold it in while pressing the Power Zoom Button "W". This places the Camcorder in the Macro Mode. Press the Power Zoom Button "W" or "T" to focus the Camcorder.

Note: Zooming is not possible when in the Macro Mode; to change the size of the subject, move the lens closer or further away from it.

– Power Zoom Buttons ––



- Press "T" and the lens will move in the "telephoto" (close-up) direction.
- Press the button labeled "W" and the lens will move in the "wide angle" direction.

When you grasp the Camcorder properly, using the hand strap the zoom buttons are easy to control with your index and middle fingers.

# **Basic Operation: Playback**

### - How to Play Back Tapes with Your Camcorder

The tapes you record on your Camcorder can be played back and viewed in many different ways: (1) Through the Electronic Viewfinder on your Camcorder.

2) In a home VHS VCR.

3) On your TV or monitor.

You can also copy your tape on a standard VHS tape in your VCR.

The following section shows you how to connect your Camcorder to a TV, monitor or VCR and explains how to play back the tapes. NOTE: Although you can use the battery to power the Camcorder during tape playback, you will want to use the AC Adapter/ Charger if you intend to watch more than an hour's worth of recorded material.

#### - How to Connect Your Camcorder to a Standard TV for Playback



Follow the steps below if you have a standard TV. You will need the *RF* Adapter and coaxial *RF* cable packed in your Camcorder.

If your antenna cable is the flat 300ohm twin-lead type that is attached by 2 screws, you will also need the 300/75ohm transformer that was packed with your Camcorder.

- 1 Disconnect the VHF antenna from your TV set. (You can leave the UHF wires alone.)
- 2) Connect your VHF antenna to the RF adapter packed with your Camcorder.
  - A If your antenna cable is a round 75-ohm cable, connect it to the *IN FROM ANT* terminal on the RF adapter.
  - B If your antenna cable is a flat 300-ohm twin-lead, you will need the 300/75-ohm transformer that was packed in

your Camcorder. Connect the flat-lead connectors to the screw terminals on the 300/75-ohm transformer. Then connect the transformer to the *IN FROM ANT* terminal on the RF adapter.

- (3) Attach one end of the coaxial RF cable packed in your Camcorder to the OUT TO TV terminal on the RF adapter.
- (4) Connect the other end of the coaxial RF cable to the VHF IN terminal on the back of your TV. (If your TV has screw terminals, connect the adapter's flat lead connectors to the screw terminals.)
- S Plug the multi-pin connector fitting on the RF adapter into the AV OUT (Audio/Video Out) jack on the Camcorder. To aid connection, match the tabs on the fitting with the notches on the Camcorder jack. Don't force the fitting. If it does

not slide in easily, check your marks and try again. (If the Camcorder is used as a camera while connected to the TV, be sure to turn the set's volume down to prevent a high-pitched squeal caused by feedback.)

- (6) Set the *RF OUTPUT* switch on the RF adapter to Channel 3 or 4, whichever is not used as a broadcast channel in your area. Turn on the TV and tune it to the channel you have chosen.
- (7) During playback, you may fine tune the TV channel if necessary. (For details of playback operation, refer to page 18.)
- (8) For normal TV viewing, you may leave the RF adapter hooked up to the TV set. Just disconnect the adapter from the Camcorder or turn off the Camcorder's power.

# Playback Operation, Cont'd.





### 

Viewfinder playback is the simplest way to watch tapes using the Camcorder, but because the display is black & white, this method is generally used only to review scenes immediately after recording.

To view a tape through the Camcorder's electronic viewfinder, follow these steps:

- (1) Turn the Camcorder on by sliding the *POWER* Switch to the *ON* position. Press the *EJECT* button and insert the cassette you wish to view.
- (2) Place the CAMERA/ PLAYBACK switch in the PLAYBACK position.
- (3) If you wish to hear the tape's audio, plug the earphone into the earphone jack (*EAR*).
- (4) Press the *PLAY* button. Playback can be viewed by watching the viewfinder screen. (Remember to adjust the Eyepiece Focus Control for your vision).
- (5) If you wish to visually scan the tape in forward or reverse, press and hold the *F.FWD* (Fast Forward) or *REWIND* button while in the *PLAY* mode. Release the button to return to normal playback speed.
- (6) If you wish to stop the action, press the *PAUSE* button while in the *PLAY* mode. Press the *PAUSE*\* button again to return to normal playback.
- (7) Don't forget to rewind the cassette when you are finished viewing tape playback.

\*Pause is designed for momentary interruptions and should not be used for an extended period of time. If the Camcorder remains in the Play/Pause mode for more than 5 minutes, the Camcorder will automatically go to stop mode to prevent excessive tape wear.



### Playing Tapes Through a TV or Video Monitor

Follow these steps when you wish to play back tapes on your TV or Video Monitor (after you have connected your Camcorder to the appropriate display device) (See pages 16 & 17 for connecting instructions).

- (1) Turn the Camcorder on by sliding the *POWER* Switch to the *ON* position. Press the *EJECT* button and insert the cassette you wish to view.
- (2) Place the CAMERA/ PLAYBACK switch in the PLAYBACK position.
- (3) Press the *PLAY* button to begin playback.
- (4) If you wish to visually scan the tape in forward or reverse, press and hold the *F.FWD* (Fast Forward) or *REWIND* button while in the *PLAY* mode. Release the button to return to normal playback speed.

- (5) If you wish to stop the action, press the PAUSE\* button while in the PLAY mode. Press the PAUSE button again to return to normal playback.
- (6) Don't forget to rewind the cassette when you are finished viewing tape playback.

NOTE: The picture will contain some horizontal lines during forward search, reverse search, and stop action.

\*Pause is designed for momentary interruptions and should not be used for an extended period of time. If the Camcorder remains in the Play/Pause mode for more than 5 minutes, the Camcorder will automatically go to stop mode to prevent excessive tape wear.

# Tape Copying and Recording on Your Camcorder from a TV or Monitor

### How To Copy Your Tapes on a Home VCR-

You can make extra copies of your videos to share with friends and family if you have a home VCR.

- 1) Attach your Camcorder to your VCR as illustrated on Page 17.
- (2) Put your VCR in the LINE or CAMERA mode. Note: If your VCR does not have a LINE or CAMERA mode, consult your owner's manual for proper operation when the AUDIO/VIDEO external IN jacks are being used.
- 3 Place a new tape into your VCR.
- 4 Turn on your Camcorder. Press the *EJECT* button and insert the cassette you wish to copy into your Camcorder.
- (5) Put your VCR in the *RECORD* mode and press *PLAY* on your Camcorder.
- (6) Remember to rewind your tapes when you have completed your copying and put your VCR out of the *LINE* or *CAMERA* mode for normal use.

CAUTION: The unauthorized recording of copyrighted material may infringe the rights of others. Such recordings should not be made.

Note: You can tune your TV or monitor to your VCR channel (3 or 4) and watch what you are recording.



# Making Better Videos

### Camcorder Recording Tips-

Use your Camcorder's Power Zoom to help you focus manually. Before you start recording, zoom in on your subject, adjust the *POWER FOCUS* Buttons (◀ and ►) until you see a clearly focused image in the viewfinder, then zoom back to the desired angle of view. Provided the subject-to-Camcorder distance does not change, the subject will remain in sharp focus over the entire zoom range.

*REMEMBER:* It's easier to make professional-looking videos if you check the focus before you start recording.

Keep your Auto Focus window clean and unobstructed to help assure proper Auto Focus operation.

Try to make sure indoor scenes you record have sufficient light. This improves picture quality and color reproduction.

Avoid long "still" shots of landmarks and scenic attractions. Your recordings will be more interesting if they include people and detail. "Local color" will give your travel videos lasting appeal. Consider taping a familiar or landmark scene from an unfamiliar vantage point to give your tape added interest. Remember to check your lighting before recording.

Use your AUTO IRIS control to fade in and out of scenes.

Practice recording under a variety of lighting conditions. This will help prepare you to respond whenever you see a scene you want to tape.

Try to avoid taping backlit subjects indoors. Bright light behind your subject may cause it to appear very dark and low in detail. Adjusting your AUTO IRIS control can help overcome this problem.

Include close-up shots of individuals when taping a family outing or other group functions. These close-ups make your video memories special.

Be aware of video and audio backgrounds. Background visual details you barely notice while you're taping may show up as visual "clutter" when you review your taped scene. Background noises (especially television sets and radios, household appliances, traffic sounds) can detract from the sounds you want to record. And *REMEMBER*: Don't bump or tap your Camcorder's microphone while you're taping, because this sound will be recorded on your tape!

Don't move the Camcorder rapidly from side to side while you're recording. A steady, gradual "pan" avoids blurring and jitter in your taped scene.

Keep your Camcorder level while taping. Otherwise, your scenes will appear tilted. Keep a close eye on this in your viewfinder!

### -Travelling Tips-

Make sure you have any plug adapters you may need *before* taking your Camcorder to other countries. Ask your RCA dealer for advice. This will assure that you can power your Camcorder and AC Adapter/ Charger as needed.

Jot down your Camcorder's serial number and keep this note separate from your equipment when travelling. If your Camcorder is lost or stolen, you will be able to identify it.

Double check your equipment before taking your Camcorder on a trip or outing. Make sure you have with you all the equipment and accessories you'll need. Compiling a checklist makes it easy to be prepared. Bring this Owner's Manual with you for handy reference.

Make a list of sights and scenes you wish to record on a trip. This will help assure that you don't miss an important recording. Be alert for unexpected interesting scenes as well.

Don't leave your Camcorder and tapes in a car for more than a brief period. Excessive heat or cold can damage them. Use extra care and caution to avoid damage to your Camcorder and accessories when operating them at a beach or pool. Spray, sand and dust should be avoided. Clean your lens gently and thoroughly if it has been exposed to the elements. Remember to use only proper lens cleaning supplies available at camera stores to protect your lens.

Carry your Camcorder in a proper case when travelling. (See Page 23 for RCA's specially designed Soft Carrying Case.) An ordinary suitcase or carry bag doesn't offer the protection and custom fit your Camcorder needs. For safety, treat your Camcorder as carry-on baggage to protect it from rough handling.

CAUTION: Do not attempt to use a "power converter" to use your AC Adapter/Charger on a power source other than 120 volts, 60 Hz or the Adapter/Charger may be damaged. If you plan to travel to a foreign country that does not use 120 volt, 60 Hz power, an optional CPS04 Adapter/Charger may be purchased from your RCA dealer. The CPS04 is designed for use on 100-240 volts, 50/60 Hz.

### -Tape Tips—

Don't try to use a tape if it has been damaged or exposed to moisture. The tape may jam or damage your Camcorder.

Remember to break off the safety tab on your cassettes after making an important recording. This will help you safeguard crucial tapes from accidental erasure.

Remember to label your tapes before storing them. Preparing your label before you use your tape helps assure that you will know what it contains.

Be careful not to misplace tape boxes. These are essential for proper tape storage. If a tape box becomes wet, do not use it. It can damage your tape and Camcorder.

# Care and Maintenance

### Proper Care of Your Camcorder\_

- Be especially careful to keep dust from entering the Camcorder's cassette door. Dust and grit are abrasive and will cause excessive wear both of tapes and of the recording/playback heads.
- RCA recommends that RCA video cassettes be used with this unit. These tapes have been manufactured to RCA's critical specifications. Use of tapes not meeting these specifications could considerably reduce the performance of your Camcorder.
- Use of poor quality tapes can contaminate the video heads, resulting in a snowy picture or no picture at all during playback.
- Playing a new RCA tape for approximately 15 minutes may satisfactorily clean the heads and improve the picture. If a snowy picture or no-picture condition persists, consult your authorized RCA Servicenter or the RCA Service Company.
- To clean the lens, always use lenscleaning tissues and a commercially prepared cleaning solution designed for use on camera lenses. Improper cleaning can scratch the lens. Do not touch the lens with your fingers! The oil from your skin can damage the lens.

#### -Things to Avoid-

- Do not attempt to disassemble your Camcorder. There are no user-serviceable parts inside.
- Never attempt to force open the cassette door. If the battery reaches its empty level during recording, the Camcorder will shut off but the battery should have enough reserve power to eject the cassette when you press the EJECT button. If the Camcorder does not eject the cassette, do not attempt to force open the cassette door. This will damage your Camcorder. To remove the cassette, simply power your Camcorder with the AC adapter/charger or recharge the battery before attempting to eject the tape.
- Do not use the Camcorder in extremely humid environments.
- If you attach a video light to your Camcorder, make sure it does not get too hot. Excessive heat could damage the Camcorder.
- Do not use the Camcorder for extended periods in temperatures below 40°F or above 95°F.
- Do not expose the Camcorder or

AC Adapter/Charger to rain or moisture. If either component becomes wet, immediately turn off power and take the unit to the RCA Service Company or an RCA Authorized Video Camera/ Camcorder Servicenter.

- Do not operate your Camcorder in a strong magnetic field. Otherwise, you risk interference to or erasure of recorded information.
- Avoid operating your Camcorder immediately after moving it from a cold location to a warm location. Give the Camcorder 1-1½ to 2 hours to reach a stable temperature before inserting a video cassette. When moved from a cold area to a warm location, moisture may condense on the head drum inside the machine. This moisture could cause the tape to stick to the headwheel and damage the headwheel or tape.

### -Storing Your Camcorder -

- Store and handle your Camcorder so that it is not subjected to swinging, shaking, or dropping. The Camcorder can be damaged by improper storage or handling.
- Don't store the Camcorder in temperatures below -22°F or above 149°F.
- Always remove the cassette and AC Adapter/Charger or battery from the Camcorder when the Camcorder is not in use.
- Retain the original carton for future storage or shipping purposes.

CAUTION: Avoid operating your Camcorder right after you have moved it from a cold location directly to a warm location. Let it warm up for about 1-1/2 to 2 hours before inserting a video cassette tape. When moved from a cold spot to a warm spot, moisture may condense on the head drum inside the machine. The moisture may cause the tape to stick and damage the head wheel or tape.

# Camcorder Accessories

### Mounting Your Camcorder on an Optional Tripod

The Camcorder may be attached to a tripod when you wish to make recordings without holding the Camcorder. This will keep the Camcorder very steady and produce excellent video results. Mount the Camcorder onto a tripod by attaching the mounting screw on the tripod to the mounting hole on the bottom of the Camcorder, as shown at right.

CAUTION: Before using a tripod, make sure it is stable enough to hold the Camcorder without falling over.



#### - Using the Camcorder's -Shoulder Strap

Among the accessories packed with your Camcorder is a shoulder strap.



The shoulder strap is designed to let you carry the Camcorder from your shoulder and-when you are ready to record-bring the unit to shooting position in one quick movement.\* The proper procedures for attaching the shoulder strap is in the diagram illustrated.

\*Note: When using the Camcorder with the shoulder strap, you may find it convenient to till the viewfinder up. This helps prevent the viewfinder from striking your body as you move, which could damage it under certain conditions.

# Camcorder Accessories, Cont'd.

### **Optional Accessories** -



#### KK040 Soft Carrying Case

accommodates Camcorder and accessories.

KK046 Hard Carrying Case affords greater protection for Camcorder and accessories when traveling.



CB060 One Hour Battery: Additional 1-hour battery for powering your Camcorder. Battery recharges from AC Adapter/Charger.



#### CB120 Long Play Battery:

2-hour battery extends operating time an additional 2 hours. Battery recharges from AC Adapter/Charger.

CPS04 AC Adapter/

operates on 100-240

Camcorder in foreign

countries. Consult your

dealer before going on vacation, you may need a

plug adapter also in some

you operate your

volts, 50/60 Hz and lets

Charger

countries





#### CGA020 or CGA030 Character

Generator/Titler makes it easy to create professional titles and special effects on your tapes. Includes a memory feature and built-in belt clip.

DCC012 DC Power Cord lets you operate your Camcorder from your car's 12-volt negative ground electrical system.

VAA002 Video/Audio Input Adapter Adapter permits you to record video and audio from an external source.

LX152A or LX153 Lens Extender increases Camcorder's magnification by 1.5 times throughout its zoom range. Contained in a snap-closure black vinyl

Note: The LX153 is lighter and recommended for this Camcorder.

case with padded interior.

WALOIA or WALO2 Wide Angle Lens expands Camcorder's field of view by a factor of .6 to permit wide panoramas without planning. Black vinyl snap-closure case with padded interior for easy access storage.

Note: The WAL02 is lighter and recommended for this Camcorder.



FSA036A Slide Adapter permits transfer of slides to tape. Kit includes three step rings, three sizes of frame holders and one filter. Accommodates 35mm slides.

#### AH005 VHS Dubbing Cable

Lets you connect your TV to your Camcorder using the VAA002 Video/Audio Adapter to record from your TV/ Monitor on your Camcorder. Note: Your TV/Monitor must have VIDEO OUT and AUDIO OUT jacks.



VHS VCR head cleaner. Be sure to follow directions carefully.





# Trouble Checks

# Check This List First If You Have a Problem

Sometimes problems can be solved easily by checking a few basics. Before you call for help or take your Camcorder to an RCA Authorized Servicenter or the RCA Service Company, check the troubleshooting tips below. You could save time and money.

If service should be necessary, RCA Authorized Video Camera Servicenters and the RCA Service Company are trained and equipped to furnish it.

# No Power (indicator will not – come on)

- If using battery, recharge.
- If using AC adapter/charger, make sure unit is plugged into working outlet.
- If using AC adapter, do not push CHARGE button or power to your Camcorder will be turned off.

### Won't Record or Play Back-

- If power light is blinking, there is moisture in unit. Leave power on and wait for light to stop blinking.
- No cassette in Camcorder.
- Eject and reinsert cassette.
- Broken tape; try another cassette.
- End of tape; rewind cassette.

#### Won't Play Back-

 Place CAMERA/PLAYBACK switch in PLAYBACK position.

#### -Won't Record -

- Safety tab has been removed from cassette. (See page 3.)
- Place CAMERA/PLAYBACK switch in CAMERA position.

#### No Picture in Viewfinder -----(EVF)

• Check EVF cable connection.

#### Tape Stops During Rewind or Fast Forward

• Memory function is active. If tape counter is displayed, press *REWIND* or *FAST FORWARD* again or remove Tape Counter Display from EVF and press again to rewind or fast forward cassette.

#### Camcorder Remains in Still-Frame Mode

• Press *PAUSE* button for normal playback.

#### -Blinking Shutter Speed (1/120, 1/250, 1/1000 or 1/2000) in Viewfinder (EVF)

- There is not enough light to record at this shutter speed.
- Put NORMAL/SHUTTER Switch in NORMAL position or reduce shutter speed.

### Poor Auto Focus Operation-

- Place MAN/AUTO FOCUS Switch in AUTO position.
- Make sure operator is not covering Auto Focus window during recording.
- Subject is dark or behind glass. Auto Focus may not work under these conditions. Switch to manual focus.
- Lens is smudged and image appears unfocused.
- Viewfinder Eyepiece Focus Control is misadjusted. (See Page 12.)
- Camcorder is in MACRO mode. Press and hold down Power Zoom Button "T" to release MACRO mode and then focus on the object.

#### Poor Picture Quality During Recording

• Insufficient light. If picture looks too dark in the viewfinder with AUTO IRIS control in AUTO position, add light to scene.

#### Poor Picture Quality During-Playback

• If picture contains black and white streaks, adjust *TRACKING* control to correct.

#### -Picture Too Dark -

NORMAL/SHUTTER switch is in SHUTTER position but there is not enough light. Shutter should be off for most shooting, especially indoors.

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# Specifications

#### General

Power requirement: 12VDC Power consumption: 9.5 watts (nominal) Weight: 4.4 lbs. (2.0 kg) Dimensions:  $4\frac{5}{8}$ " (W)  $\times 9^{13}\frac{1}{16}$ " (H)  $\times 13^{15}\frac{1}{16}$ " (D) (117  $\times 250 \times 337$  mm) Video Recorder Section Format: VHS Record/Playback System: Four video record/playback heads Video Signal: EIA Standard NTSC Color

#### **Camera Section**

Scanning: 525 Lines/60 Fields/30 Frames Required Minimum Illumination: 7 lux (0.7 foot-candle) Image Sensor:  $\frac{1}{3}$ " solid state MOS Imager Tripod Mount: One  $\frac{1}{4}$ " x 20 threaded hole Lens Diameter: 46mm

# **RCA Limited Warranty**

#### What does your warranty cover:

- Any manufacturing defect in material or workmanship.
- For how long after purchase:
  - Ninety days for labor charges.
  - One year for parts.
  - The warranty period for rental Camcorders begins with the first rental.

#### What will RCA do:

- Pay any RCA Authorized Video Camera Servicenter the labor charges to repair your Camcorder.
- Provide new or, at our option, rebuilt replacement parts for the RCA Video Camera Servicenter to make the repairs.

#### How do you get service:

- Take your Camcorder to any RCA Authorized Video Camera Servicenter or RCA Service Company. For their names and locations, ask your dealer or RCA Distributor, or look in the Yellow Pages.
- Show the service technician your Warranty Registration or evidence of purchase date.
- Pick up your Camcorder when repairs are completed.

#### What does your warranty not cover:

- Customer instruction. Your Owner's Manual provides information regarding operating instructions and user controls. For additional information ask your dealer.
- Cleaning of video/audio heads, which is normal maintenance.
- Damage from misuse or neglect.
- Camcorders which have been modified or incorporated into other products.
- Camcorders purchased or serviced outside the USA.

## How does state law relate to this warranty:

 This warranty gives you specific legal rights, and you also have other rights which vary from state to state.

# What if you purchased your Camcorder in Canada:

• Refer to the Canadian Warranty.

Si un livret d'instructions en français n'est pas inclus avec votre appareil, vous pouvez en obtenir un (INDIQUER LE NUMÉRO DE MODÈLE, VOTRE NOM, ET VOTRE ADRESSE) en vous adressant à:

RCA Inc. Service des données techniques 5575 ave. Royalmount, Ville Mont-Royal, Québec, Canada H4P 1J8



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