

Cassette-Corder

# TCM-AP1V

## Operating Instructions

### Owner's Record

The model number is located at the bottom and the serial number is located inside the cassette compartment lid. 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. TCM-AP1V Serial No. \_\_\_\_\_

Sony Corporation © 1994 Printed in Japan

### WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

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## Welcome!

Thank you for purchasing the Sony Cassette-Corder. Here are some of the useful features.

- DPC (Digital Pitch Control) allows you to adjust the pitch of the playback sound within the range of approximately  $+1/2$  octave to  $-1$  octave.
- You can increase or decrease the playback tape speed within the range of approximately  $+100\%$  to  $-30\%$ . As you can adjust the pitch at the same time, you can make the sound more comprehensible.
- VOR (Voice Operated Recording) system starts and stops recording automatically in response to the sound, and thus saves tapes and batteries.
- The pause switch is released automatically when the ■ STOP button is depressed. Thus, you don't miss a recording chance just because you forgot to release the pause.
- Sony Boundary Effect flat microphone picks up the human voice more clearly at a conference.

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## Precautions

### On power

- Operate the unit only on 3V DC.  
For AC operation, use the AC adaptor recommended for the unit. Do not use any other type. For battery operation, use two size AA (R6) batteries.
- The nameplate indicating operating voltage, etc., is located on the bottom of the unit.

### On the unit

- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.
- Should any solid object or liquid fall into the unit, remove the batteries or disconnect the AC power adaptor, and have the unit checked by qualified personnel before operating it any further.
- Keep personal credit cards using magnetic coding or spring-wound watches etc. away from the unit to prevent possible damage from the magnet used for the speaker.
- When you do not use the unit for long, remove the batteries to avoid damage caused by battery leakage and subsequent corrosion.
- If the unit has not been used for long, set it in the playback mode and warm it up for a few minutes before inserting a tape.

### On tape longer than 90 minutes

We do not recommend the use of tapes longer than 90 minutes.

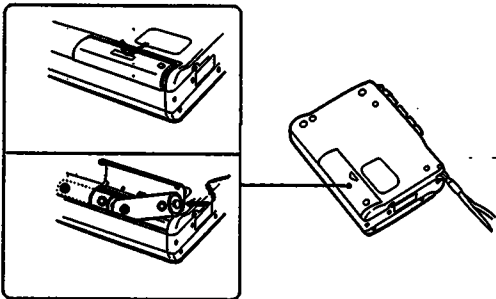
If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

# Preparing Power Sources

The unit has three power sources. Choose one of the following.

## Dry Batteries

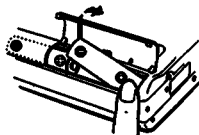
### How to insert the batteries



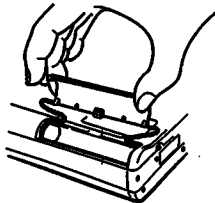
- 1 Open the battery compartment lid.
- 2 Insert two size AA (R6) batteries (not supplied) with correct polarity and close the lid.

**Note**  
When the AC adaptor or the car battery cord is connected to the DC IN 3V jack of the unit, the unit does not operate on batteries.

### To take out the batteries



**If the battery compartment lid is accidentally detached**  
Attach it as illustrated.



### When to replace the batteries

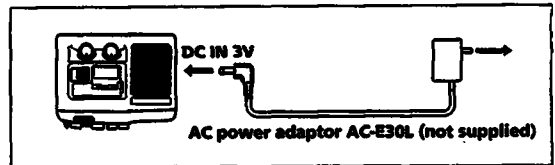
Replace the battery with new ones when the REC/BATT (record/battery) lamp dims and the sound is distorted.

### Battery life (Approx. hours)

Batteries	Recording	Playback	Playback at double speed DPCActive
Sony SUM-3 (NS)	2	2	1.5
Sony alkaline AM3(N)	9	8.5	6

When using the dry batteries, use of the alkaline batteries is recommended.

## House Current



Connect the AC power adaptor to DC IN 3V and to the wall outlet. Use AC-E30L AC power adaptor (not supplied). Do not use any other AC power adaptor.



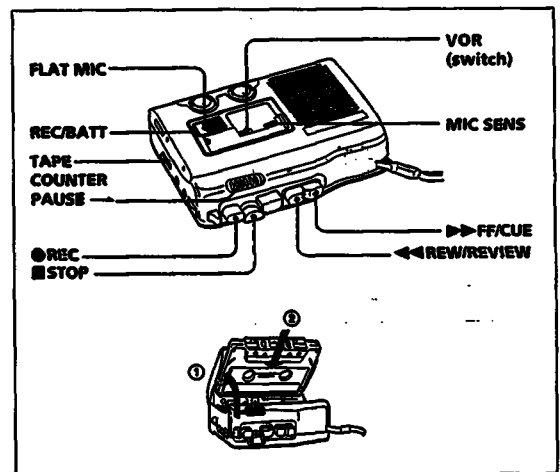
Polarity of the plug

## 12 V Car Battery

To use the unit on 12V car battery, use Sony DCC-E130L car battery cord (not supplied).

## Recording

Place the unit on a table horizontally to pick up human voice clearly with the built-in flat microphone (Sony Boundary Effect).



- 1 Open the cassette compartment lid with your fingers.
  - 2 Insert a normal (TYPE I) cassette with the side to start recording facing the lid.
  - 3 Set VOR to ON or OFF.
- If you set VOR to ON, the unit automatically starts recording the sound and pauses when there is no sound (You can save tapes and batteries). When the sound is not loud enough, set it to OFF, or the unit may not start recording.

- 4 Set MIC SENS (microphone sensitivity) to select the sensitivity of the microphone.

Recording condition	MIC SENS
At meeting or conference using an external microphone such as ECM-Z70 (not supplied)/ Normal use	MID
Recording with the built-in microphone/ In a quiet or spacious place	HIGH
Recording with an external microphone such as ECM-T110 (not supplied) clipped on your collar or pocket/In a noisy place	LOW

- 5 Press ●REC.

Recording starts. While the tape runs, the REC/BATT lamp lights and flashes depending on the strength of the sound.

To	Press or slide
Stop recording	■ STOP
Start recording during playback	● REC during playback (the unit becomes in recording mode)
Review the portion just recorded	Press and hold ◀◀REW/REVIEW during recording. Release the button at the point to start playback.
Pause recording	Slide PAUSE — in the direction of the arrow.
Take out a cassette	■ STOP and open the lid with your fingers.

#### Notes

- Do not use a CrO<sub>2</sub> (TYPE II) or metal (TYPE IV) tape, otherwise the sound may be distorted when you play back the tape, or the previous recording may not be erased completely.
- Make sure that nothing is connected to MIC when recording with the built-in microphone. Otherwise, a recording with the built-in microphone cannot be made.
- Be careful not to press the microphone forcibly. Otherwise, the microphone will be damaged and cause noise.
- SPEED CONTROL, DPC switch and PITCH CONTROL work in the playback mode only. Recording will be made independent of these controls.

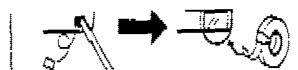
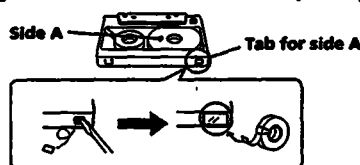
#### Notes on VOR (Voice Operated Recording) system

- VOR system depends on the environmental conditions. If you cannot get the desired results even though you adjust MIC SENS, set VOR to OFF.
- When you use the system in a noisy place, noise will be recorded and the unit will stay in the recording mode. In this case, set MIC SENS to MID (middle) or LOW to pick up necessary sound only.

#### To monitor the sound

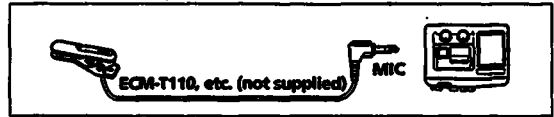
Connect an earphone (not supplied) to EAR.

**To prevent a tape from being accidentally recorded over**  
Break off the cassette tabs from side A and/or B. To reuse the tape for recording, cover the tab hole with adhesive tape.



## Recording from Various Sound Sources

### Recording with an External Microphone



Connect a microphone to MIC. Use a microphone of low impedance (less than 3 kilohms) such as ECM-T110 (not supplied). When using a plug-in power system microphone, the power to the microphone is supplied from this unit.

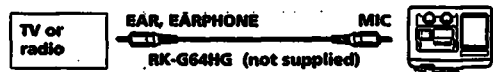
#### Note

When recording with an external microphone, the VOR system may not work properly because of the difference in sensitivity.

### Recording from Another Equipment

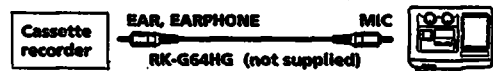
Connect another equipment to MIC using the RK-G64HG or RK-G69HG connecting cord (not supplied).

#### Recording from a TV or radio equipped with an earphone jack



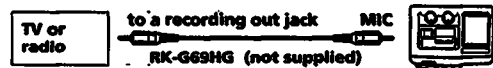
Tune in a desired station and adjust the volume of the connected equipment to a moderate level.

#### Dubbing from another cassette recorder



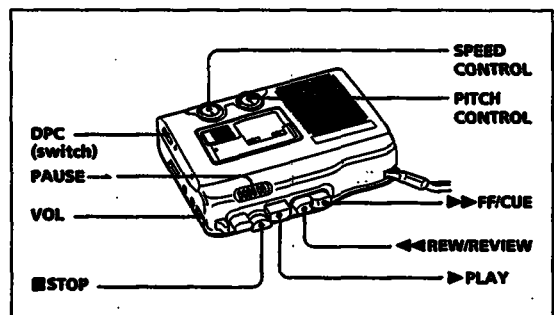
Set the connected equipment in the playback mode and adjust the volume to a moderate level.

#### Recording from a radio or TV equipped with a recording jack



Tune in a desired station. The volume setting of the TV or radio does not affect the recording.

## Playing a Tape



- 1 Insert a tape cassette with the side to start playing facing the lid.
- 2 Press ► **PLAY**.
- 3 Adjust the volume.

To	Press or slide
Stop playback/stop fast forward or rewind*	■ <b>STOP</b>
Pause playback	Slide <b>PAUSE</b> — in the direction of the arrow.
Fast forward	►► <b>FF/CUE</b> during stop
Rewind	◄◄ <b>REW/REVIEW</b> during stop
Search forward during playback (CUE)	Press and hold ►► <b>FF/CUE</b> and release it at the point you want.
Search backward during playback (REVIEW)	Press and hold ◄◄ <b>REW/REVIEW</b> and release it at the point you want.

\* If you leave the unit after the tape has been wound or rewound, the batteries will be consumed rapidly. Be sure to depress ■ **STOP**.

### How to adjust the tape playback speed (SPEED CONTROL)

#### SPEED CONTROL

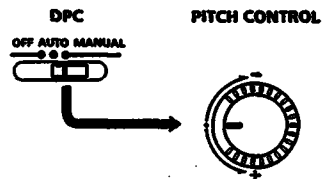


At the maximum position of this switch, the tape speed becomes almost twice as fast as that at the center position, so you can listen to the tape in about half the time.

#### Note

When the batteries are weak, if you turn **SPEED CONTROL** rapidly, the tape may stop. In this case, turn **SPEED CONTROL** slowly or replace the batteries.

### How to adjust the pitch



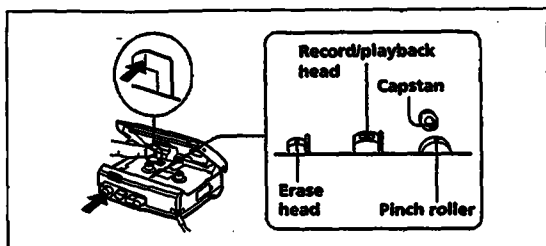
Use the **DPC** switch and the **PITCH CONTROL** switch. You can make the sound more comprehensible when changing the tape speed.

PITCH CONTROL	DPC switch
To adjust the pitch automatically depending on the tape speed ( <b>PITCH CONTROL</b> does not work).	<b>AUTO</b>
To adjust the pitch more accurately	<b>MANUAL</b>
Not to adjust the pitch	<b>OFF</b>

#### Notes

- The sound is interrupted for a moment when you change **DPC** switch during playback.
- Even though you use **DPC** switch, you cannot acquire the same pitch as the original. The tone will be somewhat different from the original.

## Maintenance



### To clean the tape heads and path

Depress ●REC while pushing the lever.

Wipe the erase head, record/playback head, capstan and the pinch roller with a cotton swab moistened with alcohol every 10 hours of use.

### To clean the exterior

Use a soft cloth slightly moistened in water. Do not use alcohol, benzine or thinner.

## Specifications

### Track

Compact cassette, Monaural

### Speaker

Approx. 3.6 cm (1<sup>7</sup>/<sub>16</sub> in.) dia.

### Frequency range

250 - 8,000 Hz

### Input

Microphone input jack (minijack/PLUG IN POWER) sensitivity 0.25mV for 3 kilohms or lower impedance microphone

### Output

Earphone jack (minijack) for 8 - 300 ohms earphone

### Power output

180 mW (at 10 % harmonic distortion)

### Variable range of the tape speed

from +100% to -30%

### Variable range of the pitch

from +1/2 octave to -1 octave

### Power requirements

- Two size AA (R6) batteries (not supplied): 3V DC
- Sony AC-E30L AC power adaptor (not supplied) 120V AC, 60Hz
- Sony DCC-E130L car battery cord (not supplied): 12V car battery

### Dimensions (w/ft/d)

Approx. 90 × 113 × 35.8 mm (3 <sup>5</sup>/<sub>8</sub> × 4 <sup>1</sup>/<sub>2</sub> × 1 <sup>7</sup>/<sub>16</sub> in.) incl. projecting parts and controls

### Mass

Approx. 270 g (9.5 oz.) incl. batteries

### Supplied accessory

Carrying case (1)

Design and specifications are subject to change without notice.



**LIMITED WARRANTY**

SONY ELECTRONICS INC. ("SONY") warrants this product against defects in materials or workmanship, as follows:

1. For a period of 90 days from the date of purchase, SONY will pay the labor charges of your SONY authorized service facility to repair the defective product. After this 90-day period, you must pay for all labor charges.
2. In addition, SONY will supply at no charge, new or rebuilt replacements for defective parts for a period of 1 year from the original date of purchase.

**Labor and Parts**

To obtain warranty service during the initial 90-day period, you must take the product, or deliver the product prepaid, to a SONY authorized service facility.

**Parts Only**

During the remainder of the warranty period, any defective part will be replaced if it is taken, or delivered prepaid, to a SONY service center. Labor for removal and installation is available from your SONY authorized service facility or SONY service center, at your expense.

This warranty does not cover cosmetic damage, and damage due to acts of God, accident, misuse, abuse or negligence to the product, including the antenna. This warranty is valid only in the United States of America.

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the warranty period must be presented to obtain warranty service.

This warranty is valid only if the serial number appears on the product.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. SONY SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. In addition, if you enter into a service contract with the Sony Partnership within 90 days of the date of sale, the limitation on how long an implied warranty lasts does not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For your convenience, Sony Electronics Inc. has established the Customer Information Center to supply you with product or service information.

Important: If returning product for service, please see reverse side of this card for your nearest Sony Service Center.

**SONY CUSTOMER INFORMATION CENTER**

201-830-SONY (7869)

714-821-SONY (7689)

708-250-SONY (7689)

or write to:

Sony Customer Information Center

Sony Drive, Mail Drop #T1-11

Park Ridge, NJ 07656

**SONY ELECTRONICS INC.**

Sony Drive, Park Ridge, New Jersey 07656

**Sony Service Centers**

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**Sony District Service Offices**

<b>Western Zone</b> Western District Sony Service Company 2729 Brand Street South Chico, CA 95926 (714) 548-4058 Northwestern District Sony Service Company 1359 Old Oakland Road San Jose, CA 95112 (408) 290-7875 Southwestern District Sony Service Company 3201 Pioneer Dr., Suite 100 Irving, TX 76039 (214) 550-5370	<b>Central Zone</b> Mid-West District Sony Service Company 1200 N. Arlington Heights Rd. Itasca, IL 60143 (708) 772-7668 East Central District Sony Service Company 18000 Town Center Circle Suite 300 West, MI 48050 (313) 247-2291	<b>Eastern Zone</b> Eastern District Sony Service Company 388 Route 17 South Nutley, NJ 07110 (201) 528-0898 Mid-Atlantic District Sony Service Company 891 Park Avenue King of Prussia, PA 19406 (215) 768-8845 Southeastern District Sony Service Company 120 Interstate North Parkway East Suite 414 Atlanta, GA 30328 (404) 953-8858
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## Troubleshooting

Should any problem persist after you have made these checks, consult your nearest Sony dealer.

### **A cassette cannot be inserted.**

- The cassette is being inserted in the wrong way.
- ►PLAY has been already pressed.

### **The lid of the cassette compartment cannot be closed.**

- The cassette is inserted in the wrong place. (The cassette should be inserted in the lid.)

### **●REC cannot be pressed.**

- There is no cassette in the cassette compartment.
- The cassette tab has been removed.

### **►PLAY cannot be pressed.**

- The tape has reached the end.

### **Abnormal sound is heard at the end of the tape in the fast forward or rewind mode.**

- The unit is not set in the stop mode. Depress ■STOP.

### **The tape stops in the cue or review mode.**

### **After the fast forward or rewind, the tape does not move even though you press ►PLAY.**

- The batteries are weak.

### **The unit does not operate.**

- The batteries have been inserted with incorrect polarity.
- The batteries are weak.
- PAUSE — is slid in the direction of the arrow.
- The AC power adaptor or car battery cord is not firmly connected.
- The AC power adaptor or car battery cord is connected to the unit only and you are going to use the unit on batteries.

### **No sound comes from the speaker.**

- The earphone is plugged in.
- The volume is turned down completely.

### **Tape speed is too fast or too slow in the playback mode.**

- SPEED CONTROL is set at a point other than the center.

### **The pitch of the sound is different from the original.**

- DPC is active.
- PITCH CONTROL is set at a point other than the center.

(The pitch cannot be the same as the original.)

### **The sound drops out or comes with excessive noise.**

- The volume is turned down completely.
- The batteries are weak.
- The heads are contaminated. See *Maintenance*.
- The tone will be somewhat different even though you adjust the pitch. This is not a malfunction.
- When you adjust the pitch, you sometimes hear buzzing or echoing. This is caused by the digital processing and is not a malfunction.

### **Recording cannot be made.**

- Connection is made incorrectly.
- The batteries are weak.
- The record/playback head is contaminated.
- MIC SENS has been set to the improper position when VOR is set to ON.

### **Recording is interrupted.**

- VOR is set to ON. When you do not use VOR, set it to OFF.

### **Recording cannot be erased completely.**

- The erase head is contaminated.