

There are four ways to record using your VCR - immediate recording, quick-set recording, automatic timer recording, and dubbing.

The video cassette you use for recording must have the erase-protection tabs in place. If the tab is removed, the cassette automatically ejects if you try to record on it. (See "Erase-Protection.")

NOTE: Your VCR automatically adjusts the sound level while it records.

Tape Selection

The tape you use greatly affects record/playback quality and the life of the VCR. Use only video cassettes that display the official VHS logo.

High-grade tape has a better oxide coating that helps prevent dirty video heads and gives the best results.

Although T-160 video cassettes offer the longest time, they contain thinner tape that is more likely to jam. We suggest you use T-120 or shorter length tape.

The following chart shows the maximum recording times for different-length tapes at three recording speeds.

Cassette Recording Speed	T-60	T-120	T-160
SP	1 hour (60 minutes)	2 hour (120 minutes)	2 2/3 hours (160 minutes)
LP	2 hour (120 minutes)	4 hours (240 minutes)	5 1/3 hours (320 minutes)
EP	3 hour (180 minutes)	6 hours (360 minutes)	8 hours (480 minutes)

Follow these steps to set the tape type so the VCR can accurately calculate and display the remaining time on the cassette tape in the VCR.

1. Press POWER to turn on the VCR.
2. Turn on your TV and set it to the same channel as the VCR's CH.4/CH.3 switch on the back of the VCR.

NOTE: If your TV has A/V inputs, be sure to set it to the video mode.

3. Press MENU. The main menu appears on the TV screen.



```
PUSH NUMBER SHOWN
1 CLOCK SET
2 NORMAL PROGRAM
3 DAILY PROGRAM
4 WEEKLY PROGRAM
5 PROGRAM REVIEW
6 CALENDAR
7 SET UP
TO END PUSH MENU
```

4. Press 7. The VCR set-up menu appears.

```
PUSH NUMBER SHOWN
1 TV SYSTEM (TV)
2 TAPE SELECT (T140, 160)
3 RENTAL POSITION (OFF)
4 AUTO CHANNEL SET
5 COLOR MENU SELECT
6 LANGUAGE SELECT
TO END PUSH MENU
```

5. Press 2 to switch the display between T120 and T140, 160.
6. Press MENU to exit the set-up menu.
7. Press MENU again to exit the main menu.

Erase Protection

Video cassettes have an erase-protection tab to prevent accidental erasure of a tape. To prevent recording, break off the tab using a screwdriver. The cassette automatically eject if you try to record on the tape.

If you do not want to record on a video cassette that does not have the tab, put a piece of heavy plastic tape over the tab hole.

Record Pause

Use PAUSE/STILL during recording to edit unwanted material, such as commercials.

Press PAUSE/STILL at the beginning of the unwanted material. The tape temporarily stops. Press PAUSE/STILL again to resume recording.

NOTE: If you leave the VCR in the pause mode for 5 minutes during recording, the VCR automatically stops.

IMMEDIATE RECORDING

You can record the same program you watch or record one program while you watch another, depending on which connection you choose.

NOTE: If you want to record from another VCR, a laser disc player, or other source with A/V outputs, see "Dubbing."

Recording a Program as You Watch It

1. Turn on the VCR and the TV. If your TV has A/V inputs, set it to the video mode.
2. Set the TV tuner to the same channel as the VCR's CH.4/CH.3 switch.
3. Press TV/VCR on the remote control so VCR appears on the display.
4. Press TU/AV on the remote control to select the tuner mode.
5. Insert the VHS tape you want to record on into the VCR.
- 6.. Press SP/LP/EP on the remote control to display the desired recording speed (SP/LP/EP).
7. Set TV/CATV on the set-up menu to the desired TV system.

PUSH NUMBER SHOWN
1 TV SYSTEM (TV)
2 TAPE SELECT (T120)
3 RENTAL POSITION (OFF)
4 AUTO CHANNEL SET
5 COLOR MENU SELECT
6 LANGUAGE SELECT
TO END PUSH MENU

8. Press CHANNEL - or + or use the remote control's number buttons to select the desired channel.
9. Press RECORD on the remote control.
10. Press STOP (or STOP/EJECT on the VCR) to stop recording.

Recording One Program While You Watch Another.

1. Follow Steps 1-9 in the previous section.
2. Press TV/VCR so VCR does not appear on the VCR's display. If your TV has A/V inputs, be sure to set it to the TV mode.
3. Set the TV tuner to the channel you want to watch.
4. Press STOP (or STOP/EJECT on the VCR) to stop recording.

QUICK SET RECORDING

Your VCR has two types of quick-set recording (QSR) -- immediate and delayed. Immediate QSR starts recording immediately and stops after the length of time you select. Delayed QSR starts recording at the time you select (within the next 24 hours) and stops after the length of time you select.

NOTE: You cannot use immediate QSR if the VCR is programmed for delayed

QSR.

Immediate QSR

1. Load the VHS cassette you want to record on into the VCR. The VCR automatically turns on.

If a cassette is already in the VCR, press POWER to turn on the VCR.

2. Turn on the TV and set it to the same channel as the VCR's CH.4/CH.3 switch.

If your TV has A/V inputs, set it to the video mode.

3. Press TV/VCR on the remote control so VCR appears on the display.
4. Press TU/AV on the remote control for the desired input.
5. Press SP/LP/EP on the remote control to display the desired recording speed.
6. Select the channel you want to record.
7. Press QSR LENGTH. The QSR menu appears with START NOW.

QSR
CH 04
START NOW
LENGTH 0H00

8. Press QSR LENGTH again to begin recording. The recording indicator REC and the recording length appear on the display.
9. Repeatedly press QSR LENGTH until the VCR displays the desired length of recording time. You can choose the time in 30-minute increments within the next 9 hours.

Delayed QSR

1. Perform Steps 1-6 in "Immediate QSR."
2. Press QSR START. The QSR menu appears on the screen and shows that delayed QSR is program.

QSR
CH 04
START 10:00 PM
LENGTH 0H00

3. Repeatedly press QSR START to display the desired recording start time. You can choose the start time in 30-minute increments within the next 24 hours.

NOTE: If you try to set the start time before setting the clock, CLOCK SET MENU appears on the TV screen.

CLOCK SET TIME --:-- TO END PUSH MENU

4. Repeatedly press QSR LENGTH to display the desired length of recording time.

NOTE: If you do not press QSR LENGTH within about 3 seconds after you press QSR START, the VCR exits the QSR mode.

5. Press POWER to turn off the VCR.

The time and recording indicators appear on the display, and recording starts at the time you select.

QSR Hints

To ensure that you record all of the desired program, set the end time a little later than the end of the program.

QSR cannot function if a cassette is not inserted, if the erase-protection tab is removed, or if an automatic timer recording is in progress.

To cancel a QSR in progress, press POWER to turn off the VCR.

To cancel a QSR during the delayed QSR standby time, press QSR LENGTH on the remote control to display 0H00.

You can change the recording length of a QSR by pressing QSR LENGTH before the delayed QSR starts.

The SP/LP/EP button is active during QSR, but should not be used while the VCR records.

You cannot check automatic program timer settings during QSR.

AUTOMATIC TIMER RECORDING

Automatic timer recording lets you set the VCR to start and end recording while you are away. You can set eight program timers to record a combination of daily, weekly, or one-time TV programs. This allows you to record at the same time Monday through Friday (DAILY), on the same day every week (WEEKLY), or on selected days within a one-year period (NORMAL).

You can set each program timer to record on a different channel and at a

different speed.

Automatic timer recording consist of two steps: setting the program timer and making the automatic timer recording.

Setting the Program Timer

You must use the remote control to set the program timer. Be sure you correctly set the clock before you use automatic timer recording.

In this example, timer No.1 is set to record Channel 04 from 9:00 PM to 10:30 PM on July 9, 1993, at the SP speed.

1. Insert the VHS tape you want to record on into the VCR. The VCR turns on.

If the cassette's erase-protection tab has been removed, place a piece of plastic tape over the hole to allow recording on the tape.

2. Turn on the TV and set it to the same channel as the VCR's CH.4/CH.3 switch. If your TV has A/V inputs, set it to the video mode.
3. Press TV/VCR so VCR appears on the display.
4. Press MENU on the remote control. The program timer menu appears on the TV screen.

```
PUSH NUMBER SHOWN
1 CLOCK SET
2 NORMAL PROGRAM
3 DAILY PROGRAM
4 WEEKLY PROGRAM
5 PROGRAM REVIEW
6 CALENDAR
7 SET UP
TO END PUSH MENU
```

5. Select the timer mode. Press 2 for NORMAL, 3 for DAILY, or 4 for WEEKLY. (For our example, press 2 to set NORMAL).

```
NORMAL PROGRAM
PROGRAM - 1 2 3 4 5 6 7 8
SELECT PROGRAM NUMBER

TO END PUSH MENU
```

6. Select the program number, using the number buttons 1-8. (For our example, press 1 to select Timer 1.)

```
NORMAL PROGRAM
PROGRAM 1
SELECT SOURCE INPUT
```

```
TUNER=1   A/V=2
          TO END PUSH MENU
```

NOTE: If all timer setting numbers light steadily, all eight timers have been set. To set another program timer, you must first clear one of the timers (see "Clearing a Program Timer").

7. Set the desired input mode, TUNER or A/V. Press 1 for TUNER or 2 for AV. (For our example, press 1 to set TUNER.)

```
NORMAL PROGRAM
PROGRAM 1
CH --
          TO END PUSH MENU
```

8. Select the channel you want to record from, using the remote control's number buttons. (For our example, press 0 and 4 to select 04.)

```
NORMAL PROGRAM
PROGRAM 1
CH 04   SPEED --
SP=1   LP=2   EP=3
AUTO=4
          TO END PUSH MENU
```

NOTE: Precede all single-digit entries with a 0.

9. Select the tape speed. Press 1 for SP, 2 for LP, 3 for EP, or 4 for AUTO. (For our example, press 1 to select SP.)

```
NORMAL PROGRAM
PROGRAM 1
CH 04   SPEED SP
START TIME --:--
          TO END PRESS MENU
```

NOTE: If you select AUTO, the VCR automatically determines how much tape is left and switches speed accordingly. Some distortion may appear at the point where the speed switches.

10. Use the number buttons to set the start time. (For our example, press 0 9 0 and 0 to set 9:00.)

```
NORMAL PROGRAM
```

```
PROGRAM 1
CH 04  SPEED SP
START TIME 09:00
AM=1    PM=2

TO END PUSH MENU
```

11. Press 1 to set AM or 2 to set PM. (For our example, press 2 to select PM.)

```
NORMAL PROGRAM
PROGRAM 1
CH 04  SPEED SP
START TIME 09:00 PM
STOP TIME --:--

TO END PUSH MENU
```

12. Use the number buttons to set the end time. (For our example, press 1 0 3 and 0 to set 10:30.)

```
NORMAL PROGRAM
PROGRAM 1
CH 04  SPEED SP
START TIME 09:00 PM
STOP TIME 10:30 --
AM=1    PM=2

TO END PRESS MENU
```

13. Press 1 to set AM or 2 to set PM. (For our example, press 2 to select PM.)

```
NORMAL PROGRAM
PROGRAM 1
CH 04  SPEED SP
START TIME 09:00 PM
STOP TIME 10:30 PM
START DATE 07/04/94

TO END PUSH MENU
```

14. Use the number buttons to set the desired date. The year and day automatically appear. (For our example, press 0 7 0 and 9 to set July 9.)

```
NORMAL PROGRAM
PROGRAM 1
CH 04  SPEED SP
```


START TIME 09:00 PM
STOP TIME 10:30 PM
START DATE 07/09/93
FRI
TO END PUSH MENU

15. Double-check all the set information.

If some information is not correct, press CLEAR/MONITOR as needed to erase the incorrect information, then enter the correct information.

When all information is correct, press MENU.

16. Press MENU again to exit the menu.

NOTE: If you accidentally set the time to record on a date that is before the VCR's clock date, PAST TIME PROGRAMMED flashes on the TV screen. Reset the program(s) with the correct time(s).

Making an Automatic Timer Recording

After you set the automatic program timer(s), follow these steps to make the recording(s).

1. Be sure the cassette you want to record on is in the cassette compartment and rewound to the correct location.
2. Press POWER to turn off the VCR.

When the clock appears, the VCR is in the timer standby mode. When a timer recording begins, the record indicator appears.

NOTE: You can turn on and operate the VCR manually prior to the set times, but the VCR makes the automatic timer recording(s) only if the power is off at the set start time(s).

Automatic Timer Recording Hints

The VCR's power turns off at the end of automatic timer recording.

If a power failure occurs or if the VCR is unplugged for more than one hour, the VCR loses the clock setting and all timer settings.

If you set the timer and turn off the VCR without loading a cassette, the cassette indicator flashes.

If the end of a tape is reached during timer recording, the VCR rewinds and ejects the tape, then turns off.

Monitoring an Automatic Timer Recording

To monitor an automatic timer recording, turn on the TV and set it to the same channel as the VCR's CH.4/CH.3 switch. If your TV has A/V inputs, set it to the video mode.

Checking/Clearing Program Timers

1. Turn on the TV and set it to the same channel as the VCR's CH.4/CH.3 switch. If your TV has A/V inputs, set it to the video mode.
2. Turn on the VCR and press TV/VCR so VCR appears on the display.
3. Press MENU. The menu appears on the TV screen.
4. Press 5 to select PROGRAM REVIEW.
5. Repeatedly press 5 to review the program information. Press CLEAR/MONITOR if you want to clear any program timers.

NOTE: If there are no program timers set when you check the timers, EMPTY flashes on the TV screen for about 3 seconds.

6. Press MENU to exit the PROGRAM REVIEW mode. The menu appears.
7. Press MENU again to exit the menu.

DUBBING

The process of recording from one VCR to another is called dubbing.

You can use a camcorder, satellite receiver, or other device with A/V outputs in place of the playback VCR.

1. Connect the playback VCR's video and audio outputs to the Model 97's corresponding AUDIO/VIDEO IN jacks on the back of the front panels.

NOTE: Always use video-quality shielded cables with phono connectors. Do not use standard audio patch cords.

If you connect a device to the front panel input jacks while another device is connected to the back panel input jacks, the front panel jacks have priority.

2. Insert a pre-recorded video cassette into the playback VCR or camcorder.
3. Insert the tape you want to record on into the Model 97's cassette compartment.
4. Press TU/AV on the remote control so AV appears on the display.
5. Press SP/LP/EP on the remote control to display the desired recording speed (SP, LP, or EP).
6. Press RECORD on the remote control.
7. Begin playback of the tape in the playback VCR or camcorder.

NOTE: For best results during dubbing, hold the Model 97's remote control close to the Model 97's remote control receiver window when you press TU/AV and SP/LP/EP. Otherwise, the remote control might affect the playback VCR's operation.

Monitoring Dubbing

1. Turn on the TV connected to the Model 97, and set it to the same channel as the Model 97's CH.4/CH.3 switch. If your TV has A/V inputs, set it to the video mode.
2. Press TV/VCR on the remote control until VCR appears on the display.

USING THE VHS INDEX SEARCH SYSTEM (VISS)

Each time the VCR begins recording, V.MARK flashes and your VCR automatically marks the tape with an index signal. These marks allow you to scan through different programs on one tape or search for a specific program.

To mark an index signal on the same program, press VISS then MARK. V.MARK flashes.

NOTES: Space each VISS signal at least 10 minutes apart.

If you press PAUSE/STILL to temporarily stop the recording (for example, during commercials), an index signal is not applied to the tape.

While a VISS signal is being marked, the recorded sound is temporarily muted.

VISS signals cannot be marked on an unrecorded portion of the tape, or on a cassette tape with the erase-protection tabs removed.

VISS Scan

The VISS scan feature plays back the first 5 seconds after each marked VISS signal so you can quickly find the recording you want to watch.

Follow these steps to use VISS scan.

1. While the VCR is stopped or playing, press VISS on the remote control.
2. Press FAST-F to search forward, or REWIND to search backward. V.SCAN appears on the TV screen.

When the VCR locates a VISS signal, the first 5 seconds of the recording plays. After each 5-second segment plays, the tape advances or rewinds to the next VISS signal.

3. Press PLAY (X2) or STOP to stop scanning.

NOTE: If the tape reaches the end during scanning, the VCR stops playback and automatically rewinds the tape.

VISS Search

You can locate up to 99 VISS signals marked on a tape and play them back automatically.

Follow these steps to use VISS search.

1. Count the number of marked signals you want to skip.
2. While the VCR is stopped or playing, press VISS.
3. Enter the number of marked signals you want to skip, using the number buttons on the remote control.

NOTE: Precede a single-digit entry with 0. If you press the wrong button, press CLEAR/MONITOR, then press the correct button.

4. Press FAST-F or REWIND. V.SEARCH appears on the TV screen. Each time a VISS signal is detected, the number you entered in Step 3 will decrease. When the number reaches 00, playback of the selected location begins.

Erasing VISS Signals

Follow these steps to erase an unwanted VISS signal.

1. Press VISS during playback, then press VISS ERASE.
2. While V.ERASE appears on the display, press REWIND or FAST-F. When the VCR finds the next VISS signal, playback stops temporarily and V.ERASE flashes. After the VISS signal is erased, playback resumes.

NOTE: While a VISS signal is being erased, the recorded sound is muted temporarily.

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