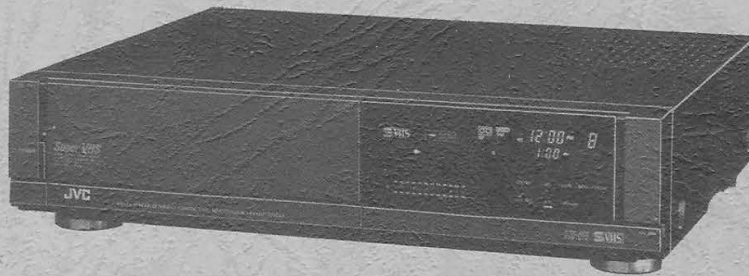


# JVC

## SERVICE MANUAL

Hi-Fi STEREO VIDEO CASSETTE RECORDER

### HR-S5000U



#### SPECIFICATIONS

Format	: S-VHS/VHS NTSC standard with Hi-Fi audio	Signal-to-noise ratio	: 45 dB (Rohde & Schwarz noise meter) with PICTURE SHARPNESS control at center position
Video recording system	: Rotary, two-head helical scan system with slant double-azimuth combination video heads	Horizontal resolution	: More than 400 lines (S-VHS)/240 lines (VHS) with PICTURE SHARPNESS control at center position
Hi-Fi audio recording system	: Deep-layer recording system conforming to stereo Hi-Fi VHS standard	<b>Audio</b>	
No. of audio channels	: 2 Hi-Fi audio channels 1 normal audio channel	Input	: -8 dBs, more than 50 k-ohms, unbalanced
Video signal system	: NTSC-type color signal and separated Y/C signals conforming to NTSC.	Output level	: -6 dBs, high impedance load
Tape width	: 12.65 mm (1/2 inch)	Output impedance	: Less than 1 k-ohm, unbalanced
Tape speed		Signal-to-noise ratio	: More than 40 dB (Normal audio)
	(SP) : 33.35 mm/s (1-5/16 ips)	Frequency range	: 70 Hz to 10,000 Hz (Normal audio)
	(EP) : 11.12 mm/s (7/16 ips)	<b>Hi-Fi audio</b>	
Maximum recording time		Frequency response	: 20 Hz to 20,000 Hz
	(SP) : 160 min. with T-160 video cassette	Dynamic range	: More than 90 dB
	(EP) : 480 min. with T-160 video cassette	Wow and flutter	: Less than 0.005 % WRMS
Temperature		Timer	: 14-day programmable timer 8 programs with repeat function
Operating	: 5°C to 40°C (41°F to 104°F)	Dimensions	: 435 mm(W) x 105 mm(H) x 380 mm(D) (17-3/16" x 4-3/16" x 15")
Storage	: -20°C to 60°C (-4°F to 140°F)	Weight	: 8.1 kg (17.9 lbs)
Antenna	: 75 ohms, unbalanced	Provided accessories	: Infrared remote control unit "AAA"-size battery x 2 S-VIDEO cable (4-pin) Matching transformer Antenna cable (F-type) Audio cable Video cable
Channel coverage			
(VHF)	: Channels 2 - 13		
(UHF)	: Channels 14 - 69		
(CATV)	: 87 channels		
RF output signal	: Channel 3 or 4 (switchable; preset to channel 3 when shipped) 75 ohms, unbalanced		
Power requirement	: AC 120 V~, 60 Hz		
Power consumption	: 42 W		
<b>Video</b>			
Input	: 0.5 to 2.0 Vp-p, 75 ohms, unbalanced		
Output	: 1.0 Vp-p, 75 ohms, unbalanced		

*Specifications shown are for SP mode unless otherwise specified.  
Design and specifications subject to change without notice.*

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## FEATURES

### High-Quality Pictures and Sound

- **Super VHS recording and playback circuitry** ensuring super-quality pictures with a horizontal resolution of more than 400 lines.
- **Separated Y/C signal terminals (S-VIDEO IN and OUT)** for higher-quality dubbing and playback of Super VHS signals.
- **Full set of HQ (High Quality) System circuits** to ensure the best possible pictures in the regular VHS mode.
- **High-performance CCD luminance signal comb filter** for both Super VHS and VHS operation.
- **Super DA-4 head system with Tape-Stabilizing head drum** for superlative picture quality in all modes.
- **Hi-Fi VHS stereo sound with a dynamic range of more than 90 dB.**
- **Advanced switching noise reduction system** which applies switching point compensation independently for each channel.
- **Flying erase head** for professional-class insert edits.
- **Edit switch** for best possible dubs.
- **Picture sharpness control.**

### Special-effects playback

- **Noiseless field stills and frame advance** in both SP/EP modes thanks to the Super DA-4 head system.
- **Slow-motion playback at 5 different speeds:** 1/30, 1/24, 1/18, 1/12 and 1/6 normal speed.
- **Variable-speed search** at 3, 5, 7 and 21 (EP) times normal speed in both directions.
- **Double-speed forward playback and normal-speed reverse playback.**
- **Shuttle Search with latch function.**

### Remote control features

- **On-Screen Menu selection operation**
  - Channel presetting
  - Timer setting
  - Clock setting
  - Status setting (source, broadcasting band, AFC, recording speed, SAP recording and on-screen mode display function on/off).
- **TV control** for power on/off, volume, channel selection and AV mode (designated JVC TVs only).
- **10-Key random-access channel selection.**

### Tuner features

- **Frequency synthesized cable-compatible tuner** retuned to 155 channels.
- **MTS decoder** built in for recording stereo and SAP programs.
- **Wider bandwidth** for accommodating higher video signal frequencies.

### Timer features

- **On-screen remote programming by menu selection.**
- **14-Day/8-event programmable timer.**
- **Selectable daily settings** (Sunday through Saturday, Monday through Saturday, and Monday through Friday) and SP/EP programming.
- **One-button instant timer recording.**

### Tape access features

- **Half-loading mechanism** for more tape access convenience.
- **VHS Index Search System** which automatically places index codes at the beginning of any recording, with mark/erase facilities for manual marking of extra index codes during recording and playback, and manual erasing of unnecessary index codes during playback.
- **Automatic location of up to 9 coded programs** by remote-specifying the number of index codes to be skipped. A specified code can be detected in the Shuttle Search, or the faster REW and FF modes (120 times normal EP speed) for automatic playback.
- **Intro search** to play back the beginning of each indexed program for about 5 seconds in fast-motion.
- **Realtime Go-To function** for locating a point on tape a specified time away from the beginning.
- **Realtime Search function** for locating a point on tape a specified time away in either direction from the current position.
- **Counter memory function** for returning to a designated point on tape.
- **Skip search** to skip unwanted tape segments 1/2 to 2 minutes in length.

### Other value features

- **Realtime tape counter** showing tape time in hours, minutes and seconds by counting the recorded 30-Hz control signal pulses.
- **Automatic functions** including Auto Play and Next-Function Memory.
- **Automatic on-screen mode display with manual recall capability.**
- **Automatic backspace editing by Zero Frame Editing system** for clean assemble edits.
- **Audio dubbing facility.**
- **Switchable AC outlet.**
- **Two pairs of audio outputs** for more systems flexibility.

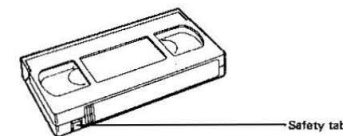
## PRECAUTIONS

### Handling and storage

- Avoid using the recorder under the following conditions:
  - extremely hot, cold or humid places,
  - dusty places,
  - near appliances generating strong magnetic fields,
  - places subject to vibrations, and
  - poorly ventilated places.
- Be careful of moisture condensation. Avoid using the recorder immediately after moving from a cold place to a warm place. The water vapor in warm air will condense on the still-cold video head drum and tape guides and may cause damage to the tape and the recorder.
- Handle the recorder carefully.
  - Do not block the ventilation openings.
  - Do not place anything heavy on the recorder.
  - Do not place anything which might spill and cause trouble on the top cover of the recorder.
  - Use in horizontal (flat) position only.
- In case of transportation,
  - Avoid violent shocks to the recorder during packing and transportation.
  - Before packing, be sure to remove the cassette from the recorder.

### Video cassettes

- This recorder employs S-VHS and VHS cassettes only.
  - S-VHS: ST-120 for 120(SP)/360(EP) minutes, ST-60 for 60/180 minutes and ST-30 for 30/90 minutes of recording.
  - VHS: T-160 for 160(SP)/480(EP) minutes, T-120 for 120/360 minutes, T-90 for 90/270 minutes, T-60 for 60/180 minutes and T-30 for 30/90 minutes of recording.
- Video cassettes are equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording cannot be performed. If you wish to record on a cassette whose tab has already been removed, use adhesive tape to block the hole.



- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid extreme humidity, violent vibrations or shocks, strong magnetic fields (near a motor, transformer or magnet) and dusty places.
- Place the cassettes in cassette cases and position vertically.

### Moisture condensation

- If you pour a cold liquid into a glass, air will condense on the surface of the moisture condensation.
- Moisture condensation on the head drum crucial parts of the video recorder, will erode tape.
- Moisture in the air will condense on the move it from a cold place to a warm extremely humid conditions.
- In conditions where moisture condensation occurs, keep the power cord plugged in an AC switched on; this would help prevent occurring. When condensation has occurred evaporate quickly once the power is switched off a few hours for the recorder to become dry.

### Operation

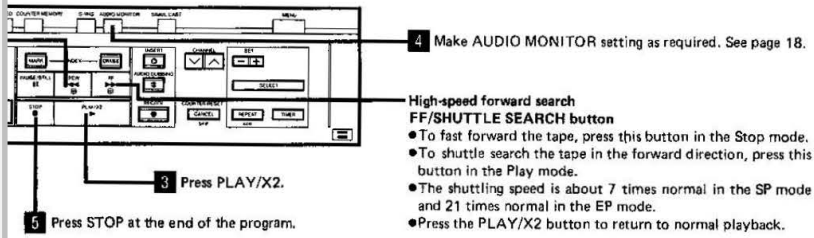
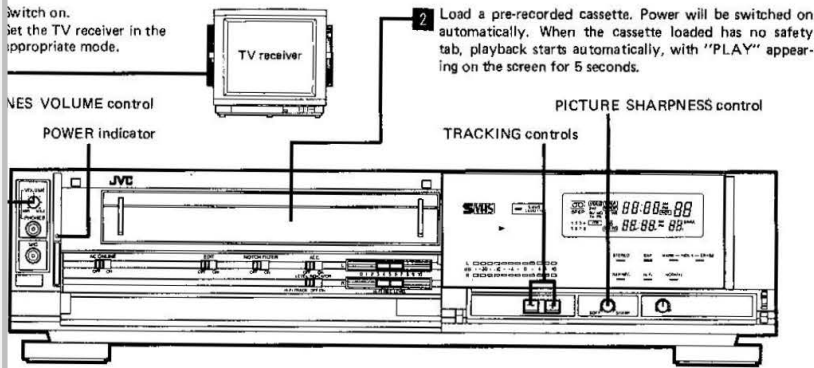
- When a cassette is loaded, the power is off if the safety tab has been removed, play automatically.
- The cassette can be unloaded even when the EJECT button turns the power off. Pressing the EJECT button turns the power off and the cassette is ejected from the case.
- As long as the TIMER button is engaged, the POWER and EJECT buttons will not work. To load a cassette, the completion of automatic loading, the Standby mode will be engaged with power on.

### Remote control unit

- Avoid violent shocks, especially take care when carrying the unit.
- Take care not to allow liquid to spill dampen the terminals.
- Do not place heavy objects on the unit.
- Avoid leaving the unit in places subject to extremely high temperatures.



**PLAYING BACK A VIDEO CASSETTE**



**High-speed forward search FF/SHUTTLE SEARCH button**

- To fast forward the tape, press this button in the Stop mode.
- To shuttle search the tape in the forward direction, press this button in the Play mode.
- The shuttling speed is about 7 times normal in the SP mode and 21 times normal in the EP mode.
- Press the PLAY/X2 button to return to normal playback.

**Skip Search function**

During playback, press the remote control's SKIP SEARCH button from 1 to 4 times to zip through 30-sec. to 2-min. sections of tape. Press the PLAY/X2 button to cancel the Skip Search mode.

SP/EP button may be in either position. SP, LP or EP mode recording is automatically detected played back at the correct speed. In the S-VHS mode button setting, the S-VHS /HS recording mode is automatically detected and played back in the correct mode. The S-VHS mode indicator lights up during playback of S-VHS recordings. When the PLAY/X2 button is pressed to start playback, the VHS mode is automatically entered, the VIDEO indicator lights up and "PLAY" appears on the screen for 5 seconds. The tape-end auto rewind mechanism functions in both the Stop and Fast Forward modes. When the SHUTTLE SEARCH button is pressed for more than 2 seconds; when you release the

button, the Search mode will be cancelled. In this case, the shuttling speed in the EP mode is about 7 times normal.

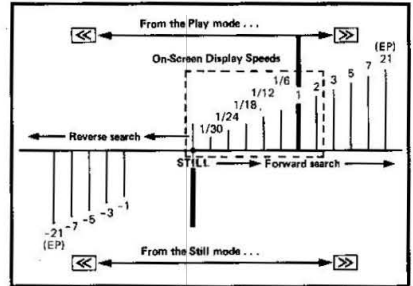
- Noise bars may appear on the screen if you play back a tape which was recorded using another recorder. In such cases, adjust the TRACKING controls. Press one of the buttons until a satisfactory picture is obtained. After playback, tracking may be reset manually by pressing both buttons simultaneously. It is reset automatically when the tape is ejected or the power turned off.
- When listening through headphones, if the volume is too low or too high, adjust the PHONES VOLUME control for comfortable listening.
- Images on the screen can be adjusted to a preferred softer or sharper definition by turning the PICTURE SHARPNESS control.

**SPECIAL-EFFECTS PLAYBACK**

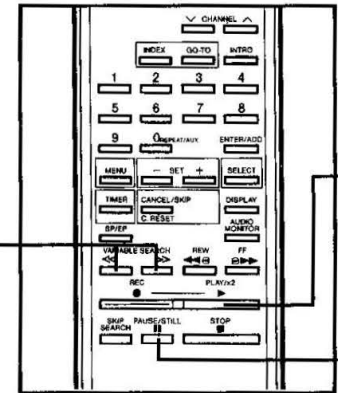
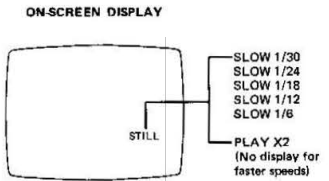
**VARIABLE SEARCH buttons on the remote control**

Variable speed search is possible in either forward or reverse direction from either the Still or Play mode.

- To search in the forward direction:
  - Press the [ ] button in the Play mode to start fast-motion searching from 2 times normal speed. To increase speed (to 3, 5, 7, 21 times normal), press [ ] repeatedly.
  - Press the [ ] button in the Still mode to start slow-motion searching from 1/30 normal speed. To increase speed (to 1/24, 1/18, 1/12, 1/6, normal, X2, X3, X5, X7, X21), press [ ] repeatedly. To decrease speed, press [ ] repeatedly. (Pressing the [ ] button in the Play mode, starts slow-motion searching at 1/6 normal speed.)
- To search in the reverse direction:
  - Press the [ ] button in the Still mode to start searching in the reverse direction at the same speed as normal speed playback. To increase speed (to -3, -5, -7, -21 times normal), press [ ] repeatedly. To decrease speed, press [ ] repeatedly.
- To return to the normal Play mode, press the PLAY/X2 button.



Selected slow-motion and X2 speeds can be displayed on the screen anytime by pressing the ENTER button.



**Double-speed playback PLAY/X2 button**

- Press while in the Play mode; double-speed playback will be engaged.
- To resume normal playback, press the same button again.

**Still playback PAUSE/STILL button**

- Press while in the Play mode; the tape will stop and a still picture will be obtained.
- To advance the still picture, press again.
- To return to the normal Play mode, press the PLAY/X2 button.

**Notes:**

- When the Still mode continues for longer than about 5 minutes, the Stop mode will be entered automatically.
- With some video cassettes, the TV picture may distort during slow-motion playback. This is not due to any defect of the unit.
- If noise bars are visible, use TRACKING controls as described on the previous page.
- With some televisions, the still picture may be unstable. If vertical vibration of the picture is observed, attempt to correct it by turning the V.LOCK control.

- No audio is available during any Special-effects playback mode.
- Special-effects playback is not possible in the LP mode. When the Special-effects mode is engaged during playback of LP recorded tapes, the picture disappears from the screen. If you happen to engage one of the Special-effects modes while playing an LP tape, simply press the PLAY/X2 button to restore the picture.