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SERVICE MANUAL

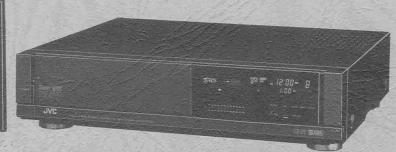
淵謂 STEREO VIDEO CASSETTE RECORDER

HR-S5000U









SPECIFICATIONS

: S-VHS/VHS NTSC standard with

Hi-Fi audio

Video recording system: Rotary, two-head helical scan

system with slant double-azimuth

forming to stereo Hi-Fi VHS standard

: NTSC-type color signal and separated

Y/C signals conforming to NTSC.

combination video heads : Deep-layer recording system con-

1 normal audio channel

: 12.65 mm (1/2 inch)

Hi-Fi audio recording

system

: 2 Hi-Fi audio channels

No. of audio channels

Video signal system

Tape width

Tape speed

(SP)

: 33.35 mm/s (1-5/16 ips) (EP) : 11.12 mm/s (7/16 ips)

Maximum recording time

(SP)

: 160 min. with T-160 video cassette

: 480 min. with T-160 video cassette (EP)

Temperature

Operating. Storage

: 5°C to 40°C (41°F to 104°F) : -20°C to 60°C (-4°F to 140°F)

: 75 ohms, unbalanced

Channel coverage

(VHF) : Channels 2 - 13 (UHF) : Channels 14 - 69 (CATV): 87 channels

RF output signal

Antenna

: Channel 3 or 4 (switchable; preset to

channel 3 when shipped) 75 ohms, unbalanced

Power requirement Power consumption

: AC 120 V ~, 60 Hz : 42 W

Video

Input Output : 0.5 to 2.0 Vp-p, 75 ohms, unbalanced : 1.0 Vp-p, 75 ohms, unbalanced

Signal-to-noise ratio : 45 dB (Rohde & Schwarz noise meter) with PICTURE SHARPNESS

control at center position

Horizontal resolution: More than 400 lines (S-VHS)/240 lines (VHS) with PICTURE SHARP-NESS control at center position

Audio

Input

-8 dBs, more than 50 k-ohms,

unbalanced

Output level Output impedance Signal-to-noise ratio

: -6 dBs, high impedance load : Less than 1 k-ohm, unbalanced : More than 40 dB (Normal audio) : 70 Hz to 10,000 Hz (Normal audio)

Hi-Fi audio

Frequency response Dynamic range Wow and flutter

Frequency range

: 20 Hz to 20,000 Hz More than 90 dB : Less than 0.005 % WRMS

Timer

14-day programmable timer 8 programs with repeat function

Dimensions

435 mm(W) x 105 mm(H) x

380 mm(D)

(17-3/16" x 4-3/16" x 15") : 8.1 kg (17.9 lbs)

Weight 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

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

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 pretuned 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. 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 remotespecifying 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

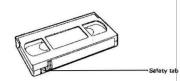
- •Realtime tape counter showing tape time in hours, minutes and seconds by counting the recorded 30-Hz control signal pulses.
- ·Automatic functions including Auto Play and Next-Function Memory.
- ·Automatic on-screen mode display with manual recall capability.
- Automatic backspace editing by Zero 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.

- 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
- 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 drug crucial parts of the video recorder, will o
- . Moisture in the air will condense on the move it from a cold place to a warm ; tremely humid conditions.
- · In conditions where moisture condens keep the power cord plugged in an AC or switched on; this would help prevent i occurring. When condensation has occ evaporate quickly once the power is av few hours for the recorder to become dis-

Operation

- When a cassette is loaded, the power is if the safety tab has been removed, play matically.
- . The cassette can be unloaded even when Pressing the EJECT button turns the pr ejection of the cassette, shuts it off aucase.
- · As long as the TIMER button is engaged indicator lit, the POWER and EJECT built and unloading of a cassette is not possib not yet been inserted, simply insert a c will be switched on to load the cassatta; completion of automatic loading, the Standby mode will be engaged with pown

Remote control unit

- · Avoid violent shocks, especially take on
- · 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.

CONTROLS, INDICATORS AND CONNECTORS

ton with LED indicator

ply power to the recorder. The indicator will ig a cassette also turns the power on.

ding slot

S or S-VHS cassette. The door will close and the owing that a cassette is inside will appear on the went display).

node indicators

mode	0 -	Insert Edit mode
Ind mode		Forward Search mode
Forward mode	P-44	Reverse Search mode
or Slow mode	0 × 11	Record Pause mode
uid mode	⇒	Audio Dub Pause mode
lo Dub mode	0 -11	Insert Edit Pause mode

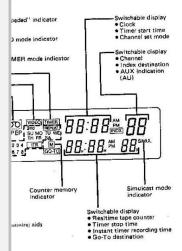
ie Indicator

S" indicator illuminates when the S-VHS recordis selected with the S-VHS mode select button hen S-VHS recordings are being played back. In S-VHS recordings are automatically detected and k In the S-VHS mode.

SSETTE indicator

lights when a cassette marked S-VHS is inserted, assette mark also appearing on the FDP. With a 1S cassette, only the cassette mark on the FDP

nsive fluorescent display panel (FDP) sined in relevant sections.



LED indicators

: Lights when a stereophonic TV program STEREO is being received.

: Lights when a TV program accompanied SAP by a second audio program is being re-

ceived.

INDEX MARK: Blinks while an index code is being recorded. INDEX ERASE: Blinks while an index code is being erased.

: Lights when 2ND AUD on the Status Set menu is set for "YES".

: Lights when Hi-Fi audio is selected with Hi-Fi the AUDIO MONITOR button @ .

: Lights when normal audio is selected. Both "Hi-Fi" and "NORMAL" indicators light when a mixture of the two is

selected.

O V. LOCK control

NORMAL

When operating in the Still mode, turn this control to eliminate vertical vibrations of the picture, if observed.

O PICTURE SHARPNESS control

Use this control to make the picture sharper or softer. Effective only for playback pictures. (No effect when recording.)

1 Infrared beam receiving window

Direct the remote control towards this window.

TRACKING buttons

If noise bars are seen during playback, use these buttons to reduce them. The tracking is reset to normal when both buttons are pressed together, a cassette ejected, or the power turned off. These TRACKING buttons can also be used to adjust hi-fi tracking, referring to the hi-fi tracking meter. (See page 18.)

Audio level indicators/Hi-Fi tracking meter

See pages 17 and 18.

Hi-Fi REC LEVEL controls

See page 17.

● LEVEL INDICATOR switch Selects the function of the audio level indicators/Hi-Fi tracking meter. (See page 17.)

ALC (Automatic Level Control) switch

Set to ON to activate the automatic level control circuit for Hi-Fi audio. For manual control, set this switch to OFF and use the Hi-Fi REC LEVEL controls @

O NOTCH FILTER

Normally set this switch to OFF, If dot noise is noticeable when watching television programs or during recording or playback in the S-VHS mode, set this switch to ON.

EDIT switch

Normally set to OFF. For making multi-generation dubs, set it to the ON position. (See page 34.)

AC ONLINE switch

OFF position : Power flows through the rear panel AC OUTLET @ regardless of whether the

recorder is on or off.

ON position

: Power flows only when the recorder is on. When used in combination with the built-in timer, this enables timer-controlled power supply for the connected equipment.

MIC jack

Connect a microphone for audio dubbing.

PHONES jack

Connect a set of headphones for monitoring or private listening

PHONES VOLUME control

Adjusts the level of the audio output from the headphone

TV/VIDEO button

Selects between TV and VIDEO modes.

TV mode (the VIDEO indicator on the FDP is off): for TV viewing and for watching a TV program while recording another.

VIDEO mode ("VIDEO" appears on the FDP): for recording a TV program while watching it and for playing back recorded tapes. When the power is switched on, the TV mode is engaged initially. To change the mode, press the TV/VIDEO button.

COUNTER MEMORY button

Press to engage the Counter Memory mode; M will appear on the FDP and the tape will automatically stop at the counter reading of "OH DOM OOS" when it is being fastforwarded or rewound.

S-VHS mode select button

This button switches between the S-VHS and VHS recording modes. When the S-VHS mode is selected, the S-VHS when S-VHS cassettes are used in the S-VHS recording

AUDIO MONITOR button

Press to select the audio output. Each time the button is pressed, the soundtrack to be heard changes (Hi-Fi stereo, normal, or mixed playback) and is indicated by the Hi-Fi and NORMAL indicators @ .

a SIMULCAST button

To record FM simulcast broadcasts, press this button (anytime, except in the AUX mode) to set to the SIMUL mode. "SIMUL" will light on the FDP. During recording, the video signal from the built-in tuner and the audio signal from the rear panel AUDIO IN connectors will be recorded.

MENU button Press the MENU button to call up the on-screen menu for clock, status, channel presetting, and timer setting. (See pages 19 and 20.)

SET (-/+) buttons

Press the SET -/+ buttons to adjust data indications or move the cursor in setting operations. (See pages 19 and 20.)

& SELECT button

Press the SELECT button to proceed to the next step or to move the cursor in setting operations. (See pages 19 and 20.)

• TIMER button

Press to engage the Timer Standby mode after you have preset the timer for unattended recording.

REPEAT/ADD button

Press to enter the repeat command in timer programming or to store a channel during channel setting.

⊕ CHANNEL (∨ / ∧) buttons

Press either button to select desired channel.

CANCEL/COUNTER RESET/SKIP button

Press this button at any time during timer programming to clear a program.

Press to reset the Realtime Counter display to "OH DOM DOS".

 Press to skip non-broadcast or undesired channels during channel setting.

AUDIO DUBBING button

Press while in the Still mode, then press the PLAY/X2 button 6 to start audio dubbing, (See page 35.)

@ REC/ITR button

Press once for normal recording; again for instant timer recording; each successive press adds 30 minutes to the recording time to a maximum of four hours. (See page 26.)

M INSERT button

Press for insert editing (See page 33.)

PLAY/X2 button

Press once to play back a tape; press again for double-speed playback. Also press this button to cancel the Pause/Still, Slow, or Search modes. (See page 24.)

BREW and FF buttons

Press REW or FF while in the Stop mode to rewind or fastforward the tape. To view a high-speed picture in the reverse or forward direction for program search, press the appropriate button while in the Play mode.

@ STOP button

Press this button to stop tape playback or recording.

PAUSE/STILL button

Press to temporarily stop the tape to avoid recording unwanted material or to view a still picture. The picture advances each time this button is pressed.

Cassette EJECT button

1NDEX MARK button

Press during playback or recording to put an index code onto the tape. (See page 31.)

MINDEX ERASE button

Press during playback to erase an index code. (See page 31.)

Remote Control Unit

The infrared remote control unit gives you full operational control from your viewing position. All control buttons, except those separately explained, have the same function as the corresponding buttons on the recorder. However, in the case of the REC button, to start recording, both the REC and PLAY/X2 buttons must be pressed simultaneously. The maximum operating distance is about 8 m (26 ft.)

TV OPERATION buttons (designated JVC TV models only.)

@ MONITOR TV/VIDE® butter

Press to select the TV's operating mode: TV to view broadcast programs or tape programs via RF OUT connection and VIDEO to view programs via AV connection.

O ROWER GAS Button

Press to turn the TV power on or off.

O VOLUME AND DESCRIPTION

Press either button to adjust the TV's sound volume.

O OLIANNELS IS NOT THE SHIRLING

Press to select the desired channel on the TV receiver.

G GO-TO button

Press once to engage the Realtime Go-To mode. (See page 29.) Press again to obtain a 5-second on-screen Realtime Counter reading in hours, minutes, and seconds.

(NDEX button

Press to engage the Index Search mode. (See page 31.)

M INTRO button

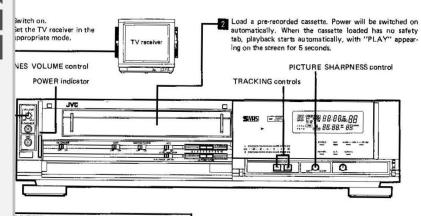
Press to engage the Intro Search mode. (See page 32.)

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PLAYING BACK A VIDEO CASSETTE





4 Make AUDIO MONITOR setting as required. See page 18.

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.

speed reverse search

/SHUTTLE SEARCH button

rewind the tape, press this button in the Stop mode. shuttle search the tape in the reverse direction, press this ion in the Play mode.

shuttling speed is about 7 times normal in the SP mode 21 times normal in the EP mode.

s 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.

spective of the S-VHS mode button setting, the S-VHS /HS recording mode is automatically detected and played c in the correct mode. The S-VHS mode indicator lights playback of S-VHS recordings.

In the PLAY/X2 button is pressed to start playback, the IEO mode is automatically entered, the VIDEO indicator the FDP lights and "PLAY" appears on the screen for 5

tape-end auto rewind mechanism functions in both the and Fast Forward modes.

briefer scanning, keep the SHUTTLE SEARCH button sed 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.

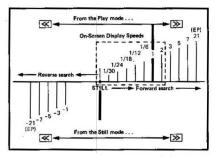
 When listening through headphones, if the volume is too low or too high, adjust the PHONES VOLUME control for comfortable listening.

 Images on the screen can be adjusted to a preferred softer or sharper definition by turning the PICTURE SHARPNESS control.

SPECIAL-EFFECTS PLAYBACK

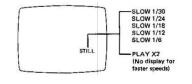
-VARIABLE SEARCH buttons on the remote control Variable speed search is possible in either forward or reverse direction from either the Still or Play mode.

- To search in the forward direction:
- Press the
 button in the Play mode to start fastmotion 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:
- ●To return to the normal Play mode, press the PLAY/X2



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

ON-SCREEN DISPLAY



- 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

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.

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