

# SONY®

EIA/NTSC

## S-VHS Videocassette Recorder **SVO-9600**



# S VHS



# ANOTHER INNOVATION

*Sony has made an important addition to its professional VTR product range with the introduction of the SVO-9600, S-VHS Hi-Fi video cassette recorder.*

*The SVO-9600 inherits Sony's professional VTR concept, the reliable mechanism, rigid construction, easy operation, 19-inch rack mount capability, etc. Thus, the SVO-9600 ensures reliable and stable operation in the industrial and professional environment.*

*The SVO-9600 is designed as a multi-purpose VTR with the use of various optional interface boards.*

*Three different optional interface boards for the SVO-9600 are available for specific purposes. They are Sony's 33-pin, an RS-232C, and an RS-422 interface boards. By selecting a particular optional board, the VTR can be a dedicated machine for a particular purpose such as interactive system, satellite recording, office viewing, visual presentation, video library, video editing, sports analysis and many other applications.*

*In addition, optional features such as digital clear freeze images, a digital noise reducer and an SMPTE time code generator/reader make the SVO-9600 more versatile.*





# FEATURES

## HIGH PICTURE QUALITY

### S-VHS Format

The SVO-9600 uses the S-VHS format to provide superb color picture with high resolution. In the rotary heads, the SVO-9600 incorporates a wide video/FM audio head design for stable picture and sound pick up.

### Cross Talk Cancellor

The SVO-9600 incorporates a newly developed video cross talk canceller. It eliminates color blur, provides accurate color and sharper images.

### Digital Y/C Separator

The SVO-9600 ensures high quality recording even with composite signals. It incorporates the newly developed Digital Y/C Separator which maintains picture quality in composite recording. As a result, dot interference and cross color are reduced.

### Four Channel Audio Recording System

The SVO-9600 incorporates a four-channel audio recording system; two channels of Hi-Fi and two channels of normal, for wider audio applications. In the Hi-Fi mode 90 dB of wide dynamic range and high quality sound reproduction is realized. A Hi-Fi recording ON/OFF mode is also provided to optimize video performance.



### Dolby™ Noise Reducer

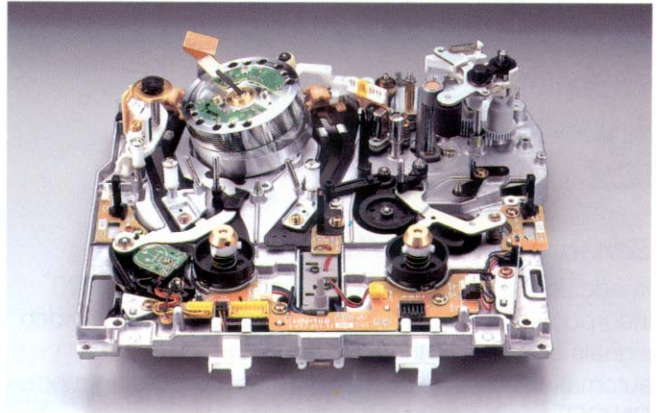
A Dolby™ Type B noise reducer is incorporated in the normal audio recording system to provide high quality sound.



## HIGH RELIABILITY

### Reliable Mechanism

Careful attention has been paid to ensure high durability and reliability of the SVO-9600. A rigid aluminum chassis and head drum are examples of the care taken to ensure the highly stable operation of the SVO-9600.



### Quick Response Mechanism

Outstanding operational performance comes from Sony's tape transport system. The SVO-9600 has two direct reel motors, one each for the supply side and the take up side. This provides rapid response and smooth operations. Mode transitions, such as STOP to REC, FAST FWD to PLAY, STOP to REWIND, etc., are virtually instantaneous.

### Auto Head Cleaner

Each time a cassette is loaded or ejected, a cleaning roller automatically passes over the video/FM audio (rotary) heads, removing tape residue and providing preventive care of the tape heads.

## CONVENIENT FEATURES & FUNCTIONS

### VTR Mode Setting Menu


To provide efficient operation, a VTR mode set menu is incorporated in the SVO-9600 allowing customized variety of VTR mode operations. The MENU incorporates such as Long Pause Time, Digital CNR ON/OFF, Digital YNR ON/OFF, Y ENHANCER ON/OFF etc. Menus are displayed in the LED indicator.


### Search Dial

Picture search can be operated with the search dial of the SVO-9600. Recognizable color pictures in the range from -10 to +10 times normal speed are provided in the search mode. This facility allows any desired point in the tape to be quickly located. When the optional Remote Control Unit, SVRM-100A is used, frame by frame picture search is available with the JOG dial.



## Programmed Operation

Two types of programmed operations can be selected. By selecting the  mode, repeated playback operation between two pre-selected points is possible when setting two points with MARK IN A and MARK IN B buttons.

By selecting the  mode, the tape automatically stops at the point designated by MARK IN A.

## Timer REC & PLAY Function



By selecting the TIMER switch to either REC or PLAY, the SVO-9600 automatically executes the selected mode when the power is turned on. This function is useful for unattended operation, such as satellite recording.

## Sensor Recording Function

In addition to the Timer REC function, the SVO-9600 incorporates Sensor Recording capability. When video signals are input to the SVO-9600, the VTR automatically starts recording. Sensor recording mode ON/OFF can be selected in the menu.

## Audio Dubbing Function



Additional audio, such as music or narration, can be easily added to a videocassette which already has video signals on it by simply pressing the DUB and PLAY buttons simultaneously. Additional audio is recorded on one of the two normal audio tracks.

## Error Code Indication

When the SVO-9600 encounters a technical difficulty, the VTR comprehensively displays a message code in an LED indicator.

## Real Time Counter

The LED display shows real time in hours, minutes and seconds to indicate accurate tape running time.



## Optional Remote Control Units

Wired simple remote for PLAY/REC/STOP/F FWD/REW/PAUSE/FWD SEARCH\*/REW SEARCH\*/ EJECT\* can be operated from the optional Remote Control Unit SVRM-100A or RM-V200 via REMOTE connector on the front panel. In addition, the SVRM-100A provides a JOG/SHUTTLE dial for quick and precise picture search.

\* Functions available only on the RM-V200

## S-VIDEO IN/OUT Connector (4-pin DIN)



The SVO-9600 is equipped with S-VIDEO IN/OUT connectors. The connector carries separate Y (luminance) and C (chrominance) signals. This reduces picture deterioration due to cross color and dot interference, during signal transmission. For secure connections, Sony employs a locking connector compatible with current S VIDEO connectors and cables.

## External SYNC IN Connector



Synchronization with other video sources is possible through the external SYNC IN connector.

## 4-Channel Audio Connectors

The SVO-9600 is equipped with 4 channels of Audio IN/OUT connectors. Two channel each of Hi-Fi (AFM) recording system and longitudinal normal recording system are provided.

## 8-pin TV Connector

An 8-pin Audio/Video connector is incorporated into the SVO-9600. This connector simplifies cable connection to a TV monitor.

## Adjustable Front Panel

The SVO-9600's control panel can be slanted at 30, 60 or 90 degrees for operational convenience.

## 19-inch EIA Standard Rack Mountable

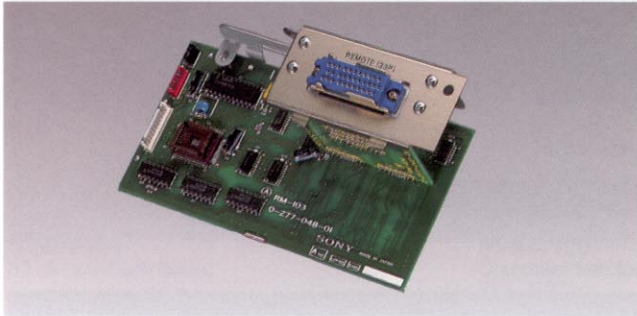
With the optional Rack Mount Kit RMM-980, the SVO-9600 can be installed into a 19-inch EIA standard rack.



## OPTIONAL INTERFACES

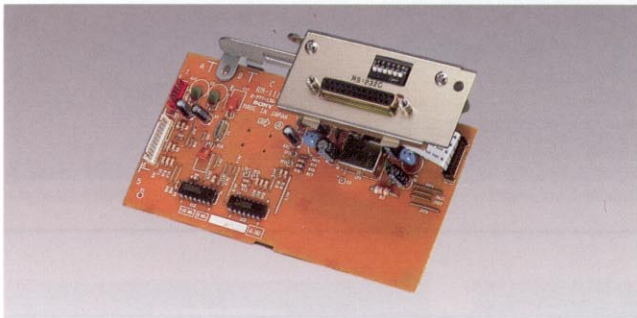
### 33-pin Interface Board SVBK-100

When the SVBK-100 33-pin Interface Board is installed, the SVO-9600 is provided with a 33-pin parallel remote interface capability to allow remote control of basic VTR functions.



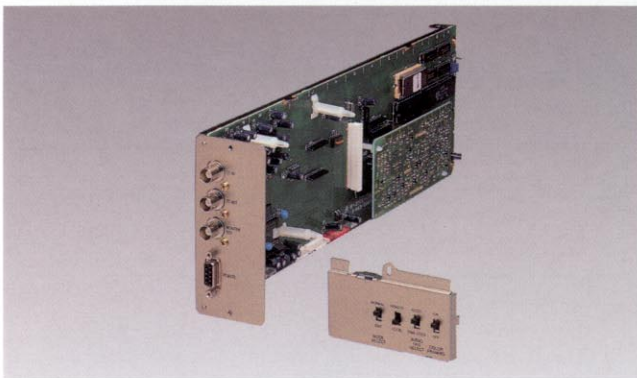
### Computer Interface Board SVBK-120 (RS-232C)

The SVBK-120 Computer Interface Board provides the RS-232C interface. This interface allows the SVO-9600 to be directly connected to an external computer. Therefore, the VTR can be controlled from a computer.



### RS-422 Interface Board SVBK-140 (9-pin REMOTE)

By installing the SVBK-140, the SVO-9600 is equipped with 9-pin REMOTE (RS-422) interface to be configured into Sony's 9-pin based editing system. With the SVBK-160 Time Code Board installed, the SVO-9600 can be used for time code based applications.

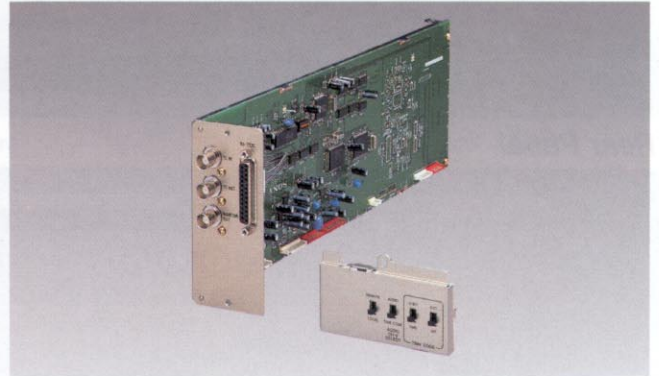


### RS-232C Interface Board SVBK-180

The SVBK-180 is an RS-232C interface board incorporating an SMPTE standard time code generator/reader. It allows the SVO-9600 to be directly controlled by an external computer via an RS-232C port. With the SVBK-180 installed, the SVO-9600 can be used as a

computer controlled viewing system where accurate, random access to a desired point is required. Furthermore, when used in combination with the Sony FXE-100 Video Editing System, the SVO-9600 with the SVBK-180 creates an RS-232C controlled, simple and cost-efficient editing system\*. By setting a dip switch on the SVBK-180, this board can also be used with the SVO-9600 in which the SVBK-120 is already installed.

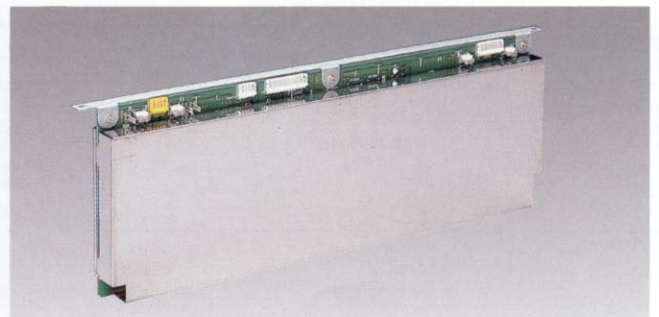
\* In this case, an Upgrade Kit for the FXE-100 (FXE-KIT1) is required. For detailed information on this upgrade kit, please contact your nearest Sony office.



## OPTIONAL BOARDS

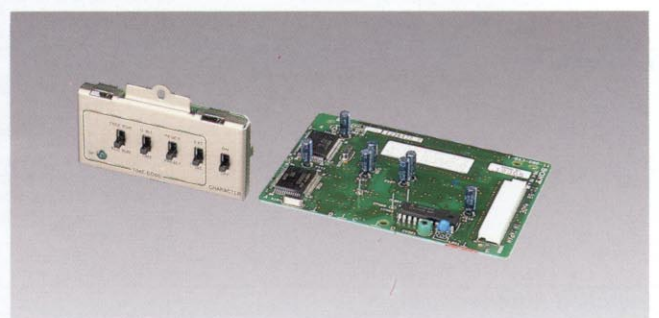
### Digital Noise Reducer Board SVBK-150

The SVBK-150 Digital Noise Reducer Board reduces both Y (luminance) and C (chrominance) noise with its YNR (noise reducer) and CNR, thus providing superior picture quality. A field storage device used in the SVBK-150, also part of the noise reducing process, removes jitter and Y/C delay to give stable, sharp images. In addition, the SVBK-150 provides clear and crisp still frames.



### Time Code Board SVBK-160

The Time Code Board SVBK-160 attaches to the SVBK-140 RS-422 Interface Board. The SVO-9600 can record and read SMPTE time code when the SVBK-160 is used. Time code is recorded on one of two normal audio tracks.

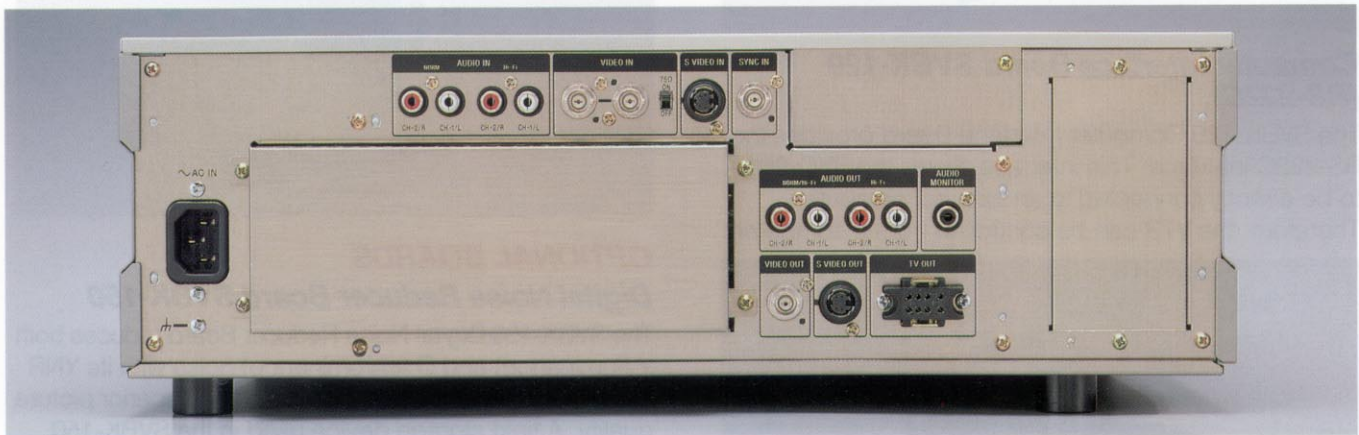




## Front Panel



## Rear Panel



## SPECIFICATIONS

### General

|                         |   |
|-------------------------|---|
| Mass:                   | 14.0 kg (30 lb 14 oz)                               |
| Dimensions (W x H x D): | 424 x 147 x 452 mm (16 3/4 x 5 7/8 x 17 3/4 inches) |
| Power requirements:     | AC 120V, 60 Hz, 3 wire grounded receptacle          |
| Power consumption:      | Less than 49W                                       |
| Operating temperature:  | 5°C-40°C (41°F-104°F)                               |
| REC/PB mode:            | SP  |
| Tape speed:             | SP: 33.35 mm/s                                      |
| Tape format:            | S-VHS or VHS  |
| F FWD and REW time:     | Max. 2.5 min. (with T-120)                          |

### Video

|                         |  |
|-------------------------|--|
| Video signal:           | NTSC (color)/EIA (monochrome)  |
| Video recording system: | Rotary two-head helical scanning FM system   |
| Input:                  | BNC: 1.0 Vp-p, 75 Ω, sync negative S-VIDEO: 4-pin DIN<br>Y: 1.0 Vp-p, 75 Ω, sync negative<br>C: 0.286 Vp-p, at burst level, 75 Ω |
| Output:                 | BNC: 1.0 Vp-p, 75 Ω, sync negative S-VIDEO: 4-pin DIN<br>Y: 1.0 Vp-p, 75 Ω, sync negative<br>C: 0.286 Vp-p, at burst level, 75 Ω |
| S/N ratio:              | 46 dB  |

### Audio

|                              |   |
|------------------------------|---|
| Input (0 dBs = 0.775 Vrms):  | Phono: -6 dBs, 47 k Ω, unbalanced                                 |
| Output (0 dBs = 0.775 Vrms): | Phono: -6 dBs, 10 k Ω, unbalanced                                 |
| Frequency response:          | 50 Hz ~ 12 kHz (in normal mode)<br>20 Hz ~ 20 kHz (in Hi-Fi mode) |
| Dynamic range:               | 90 dB (in Hi-Fi mode)   |

### Connectors

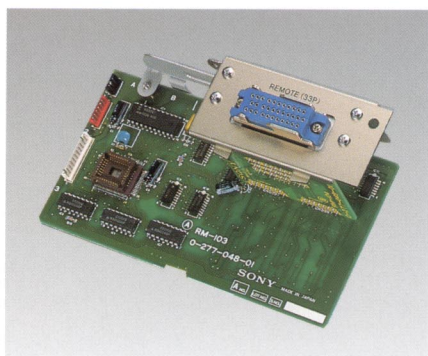
|               |   |
|---------------|---|
| Video:        | IN x 1 with loop-through out (BNC)<br>OUT x 1 (BNC)<br>SYNC IN x 1 (BNC)  |
| Audio:        | AFM IN x 2 (Phono)<br>NORMAL IN x 2 (Phono)<br>AFM OUT x 2 (Phono)<br>NORMAL OUT x 2 (Phono)<br>Monitor OUT x 1 (Phono) |
| S-VIDEO:      | IN x 1 (4-pin DIN)<br>OUT x 1 (4-pin DIN)   |
| TV connector: | OUT x 1 (8-pin)   |

### Supplied Accessories

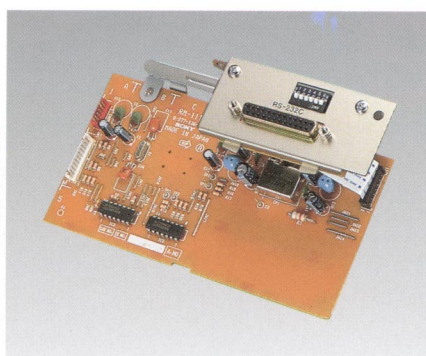
|                    |     |
|--------------------|-----|
| AC power cord      | (1) |
| Instruction manual | (1) |



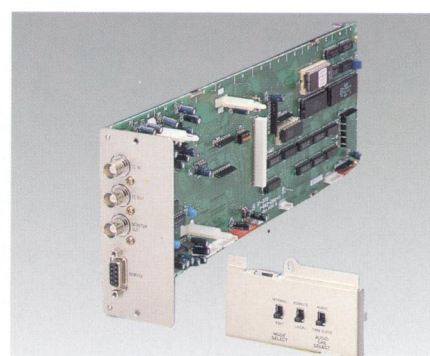
# OPTIONAL ACCESSORIES



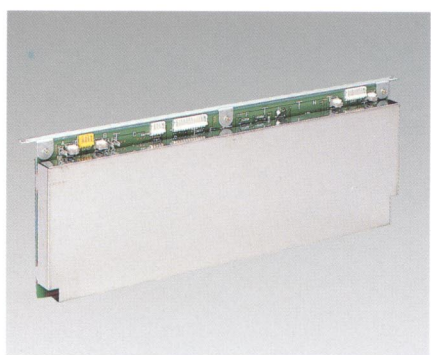
**SVBK-100**  
33-pin Interface Board



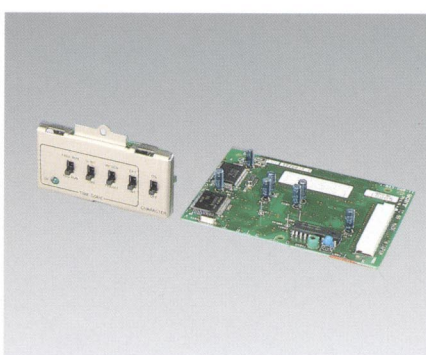
**SVBK-120**  
Computer Interface Board  
(RS-232C)



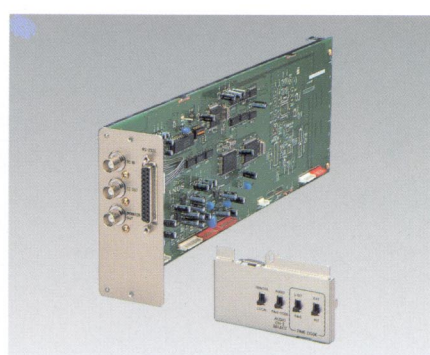
**SVBK-140**  
RS-422 Interface Board



**SVBK-150**  
Digital Noise Reducer Board



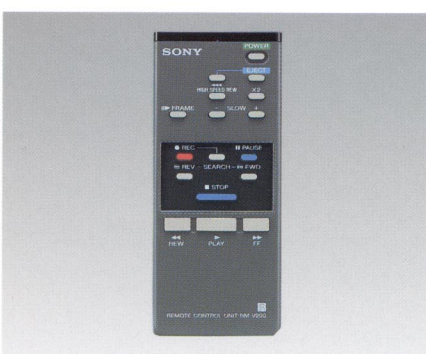
**SVBK-160**  
Time Code Board



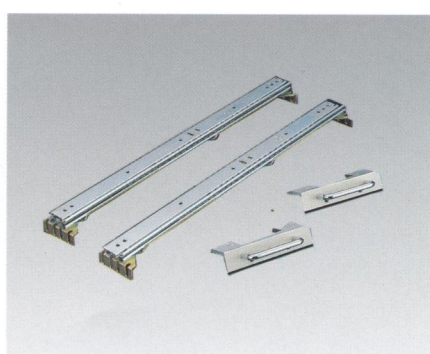
**SVBK-180**  
RS-232C Interface Board



**SVRM-100A**  
Remote Control Unit  
\*\* FREEZE, INDEX, ERASE and MARK functions of the SVRM-100A are not available for the SVO-9600.



**RM-V200**  
Remote Control Unit  
\* POWER ON/OFF, HIGH SPEED REWIND, X2 PLAYBACK, FRAME ADVANCE, SLOW functions of the RM-V200 are not available for the SVO-9600.



**RMM-980**  
Rack Mount Kit



**ST-30/60/120**  
S-VHS Videocassette