

# SONY®

NTSC

## Digital Videocassette Recorder

# DSR-70

### DV CAM™



★ Simulated Picture



# ***DSR-70 - An Innovation in***

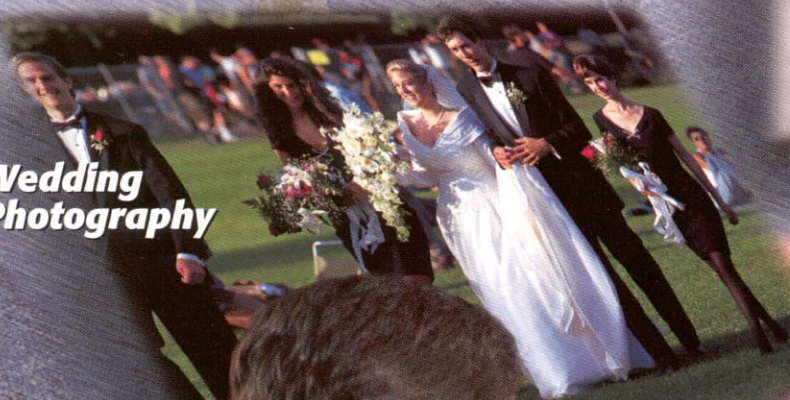
***Documentary***



***Video Journalist Acquisition***



***Wedding Photography***



***Recording of Landscape***



***Field Editing with DV Camcorder***

*The launch of the DVCAM™ format in 1996 marked the beginning of a new digital era in professional video production. The DVCAM format has brought many benefits to video professionals: great picture and multigeneration quality, excellent editing capabilities, system versatility and professional reliability to name a few. Based on the DVCAM format, the DSR family of VTRs and camcorders covers a wide range of applications from field acquisition through editing and transmission.*



# Editing Style

**Event Recording**



**Transmission to  
Broadcast Station**



**VTR-to-VTR Editing**

Now a new member joins the DSR family, the DSR-70 Portable Editing Recorder. With an all-in-one package that includes an editing VTR and 6.4-inch LCD monitor, the DSR-70 combines high mobility and portability with excellent editing performance. Two-camera switching recording, VTR-to-VTR editing as a double deck editor, ClipLink™ operation and two-way battery operation are just some features that are invaluable in the field. The DSR-70 serves as a high-performance portable editing VTR for all video professionals in field acquisition such as video journalism, event photography, corporate video production and broadcasting station use.



# The DVCAM Format

The DSR-70 employs the DVCAM format.

### Digital Component Recording Format

The DVCAM format uses 8-bit digital component recording with a 5:1 compression ratio and a sampling rate of 4:1:1 to provide high picture quality and superb multigeneration performance.

### Digital Audio

The DVCAM format has superior digital audio performance, with a wide dynamic range and an excellent signal-to-noise ratio that is comparable to CD quality audio. There are two selectable audio channel modes: a two-channel mode with 48 kHz/16-bit recording or a four-channel mode with 32 kHz/12-bit recording.

### Playback Capability of the DV Format

The DVCAM format is the professional extension of the consumer DV format. All DVCAM equipment is capable of playing back DV recorded\* tapes without any special adaptor. This is very convenient, for instance, when playing back DV recorded tapes as source material.

\* SP mode only

### Up to Three-hour Recording Capability

DVCAM video cassette tapes are available in two sizes: standard and mini.

Recording time of up to 184 minutes is provided with a standard size cassette and up to 40 minutes with a mini size cassette. With advanced Metal Evaporated tape technology, long recording times are achieved in very compact cassettes with a tape width of 1/4 inch (6.35 mm).

# High Mobility & Portability for Field Use

### Compact, All-in-one Package

The DSR-70 is a highly portable and mobile editing recorder ideal for field applications.

The compact body of the DSR-70 incorporates a 6.4-inch VGA LCD monitor, a full cut-editing controller with a Jog/Shuttle dial and an audio speaker. Easy to carry anywhere by hand, the DSR-70 plays an important role in field acquisition and editing where quick operation and high mobility are priorities.

### Double Deck Editor

By docking two DSR-70 units together\*, a fully featured cuts only editing system is created. This configuration provides VTR-to-VTR editing with Jog/Shuttle dial operation.

The DSR-70 can also be combined with a DNW-A25 Betacam SX™ portable editing recorder, allowing DVCAM-to-Betacam SX editing and vice versa. Not only DVCAM-to-Betacam SX editing, but Betacam SP®-to-DVCAM editing is also available because of the analog playback capability of the DNW-A25. This gives the flexibility to use the ideal format for each application.

\* The optional BKNW-225 Docking Kit is required.  
The optional DSBK-140 or DSBK-150 is recommended.





## Flexible Power Supply System

The DSR-70 operates on 12 V battery power using BP-L60A/L90A lithium-ion batteries which provide high capacity in a compact size. With a fully charged BP-L90A, the DSR-70 will record for approximately 120 minutes with its LCD monitor fully functioning (without options).

AC power operation is also available. There is a choice of three AC adaptors, the AC-DN2A via the V-shoe attachment or alternatively the AC-550 or CMA-8A via the 4-pin XLR connector. The AC-DN2A has the important advantage of being able to supply power for two DSR-70s or a DSR-70 and DNW-A25 docked together.



DSR-70 with BP-L90A

DSR-70 x2 with AC-DN2A



## Unique Functions for Acquisition

### Two-Camera Switching Recording ... DSBK-180

The DSR-70 really shows its flexibility when in the field. With the optional DSBK-180 Dual Video Input Board, two cameras can be connected and the output of either one recorded. The DSR-70 displays both camera images on its LCD screen using a picture-in-picture mode. The TRIM buttons on the key panel of the DSR-70 are used to select which camera is recorded.

The DSR-70 is also capable of displaying the chroma phase and sync phase of the two cameras on the screen for adjustment, which requires no measurement equipment such as a waveform monitor.

This feature greatly aids the event and wedding videographer, video journalist, etc. with a minimum system and smaller crew.

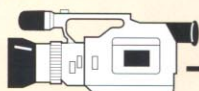
### Sequential Recording

In the double deck configuration (DSR-70+DSR-70 or DSR-70+DNW-A25), sequential recording without a break is available by using each deck alternately. When the tape remaining time of the recorder deck reaches two minutes, the player deck automatically starts recording.

With two DSR-70 VTRs, up to six hours of recording can be obtained. This is very convenient for those applications which require a recording time of over three hours such as a concert, ceremony and so on.

### Two-Camera Switching Recording

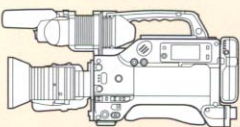
Camera #1



DV camcorder  
(ex. DCR-PC7/PC10/VX1000)

Ref. IN

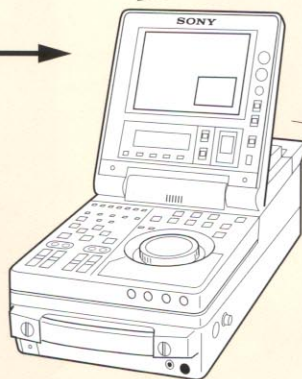
Camera #2



DVCAM camcorder  
(ex. DSR-130/300)

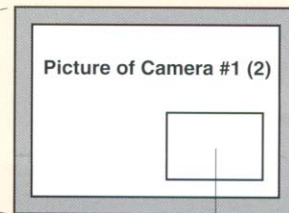
Composite IN

Ref. OUT



DSR-70 with DSBK-180

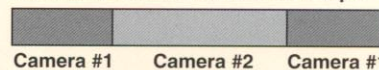
Picture-in-Picture on LCD screen



Picture of Camera #2 (1)



Switched video recorded on a tape

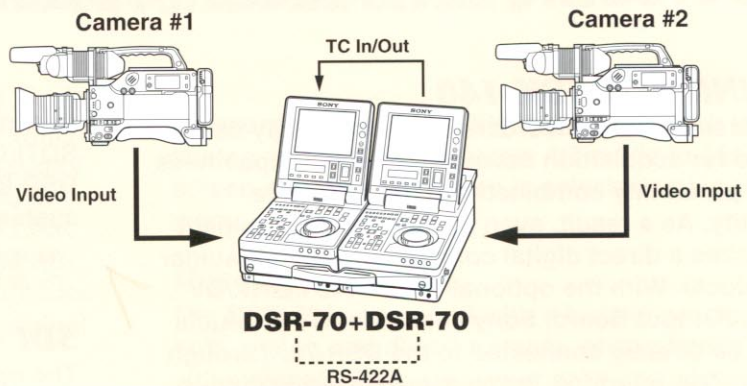




## Parallel-Run Recording

The DSR-70 has a parallel-run recording function where two docked DSR-70 machines can record simultaneously. With their time code in/out connection, synchronized recording with the same time code is ensured. This is ideal for multi-camera recording and sync roll editing.

## Parallel-Run Recording



## Excellent Editing Performance

### VTR-to-VTR Editing

When one DSR-70 is docked with another DSR-70, or a DSR-70 with a DNW-A25, VTR-to-VTR editing can be carried out using the Jog/Shuttle dial operation. This is equivalent operability to conventional VTR editing.

### Frame Accurate Editing

The DSR-70 has an RS-422A industry standard remote control interface which is used for professional editing. On top of this, with its sophisticated servo control and built-in time code generator/reader, frame accurate editing is available in both assemble and insert modes. The time code conforms to the SMPTE standard.

### ClipLink™ Operation

Making a rough edit in the field can make final editing in the studio much quicker. Utilizing the ClipLink function, recorded material can be reviewed and prepared for final editing while on location.

During acquisition with the DSR-130 or DSR-300 DVCAM camcorder, the time code data of the in-point/out-point of each shot and OK/NG status are recorded in the cassette memory of the DVCAM tape. Afterwards, these can be changed\* using the DSR-70, while viewing the character display of the ClipLink Log Data on the LCD screen. Also, by adding in-points/out-points from the key panel, the DSR-70 automatically recognizes these as newly created Mark In/Out points.

Moreover you can easily cue up to the designated points (Mark In points / Cue address) while viewing the ClipLink Log Data. This makes it possible to perform a quick picture search.

\* This function is available only when a tape that has no Index Picture is used.

### Audio MIX/SWAP Recording

The DSR-70 also shows its excellent functionality in audio editing. The DSR-70 can mix\*/swap input signals from the SDTI(QSDI™), SDI, i.LINK or two analog audio\*\* interfaces.

\* Max. two channels

\*\* Two input connectors and two output connectors are provided. In four-channel selectable mode, only two pairs of audio channels (CH-1&CH-2 or CH-3&CH-4) are available.

### Digital Slow Function

The digital slow function takes advantage of digital processing to allow playback of video signals over the range of 0 to 0.5 times normal playback speed in both forward and reverse.

### Jog Audio

In the Jog mode, digital audio can be reproduced over the range of 1/30 to 1 times normal speed in both forward and reverse. This is very helpful for making quick and precise decisions on editing points by monitoring the digital audio signals.

### High-speed Picture Search

The DSR-70 features high-speed picture search. This provides recognizable pictures over a range of up to 32 times normal speed, in both forward and reverse.

This function is also available using RS-422A-equipped editing controllers.



# Versatile Interfaces (Options)

## i.LINK\* ... DSBK-140

Consumer DV camcorders are increasingly being used for acquisition because of their compactness and portability combined with good picture quality. As a result, even professional equipment requires a direct digital connection with consumer products. With the optional DSBK-140 i.LINK/DV Input/Output Board, Sony consumer DV products can be directly connected to the DSR-70. Through the i.LINK interface, frame accurate cut editing is possible between a consumer DV camcorder (as a player) and the DSR-70 (as a recorder) with just a single cable connection. This interface also allows source material to be dubbed and edited with virtually no deterioration of video and audio quality.

\* i.LINK stands for IEEE1394-1995 standards and their revisions.  
i is the logo for products that implement i.LINK.

## SDTI(QSDI™) ... DSBK-150

Installing the optional DSBK-150 SDTI(QSDI) Input/Output Board provides the DSR-70 with a SDTI(QSDI) digital interface\*. The SDTI(QSDI) interface provides virtually degradation-free transfer of both video and audio signals. Through

this interface, a DSR-70 can be connected to other SDTI(QSDI)-equipped machines such as DSR-85/80/60 DVCAM VTRs and EditStation systems, resulting in high quality digital video.

\* The SDTI (Serial Data Transport Interface) is defined as SMPTE 305M.  
The SDTI(QSDI) is the DV signal interface which conforms to the SDTI.

## SDI ... DSBK-160

The optional DSBK-160 SDI Input/Output Board allows direct digital connection with SDI-equipped devices such as Digital BETACAM™ and Betacam SX VTRs, ensuring upward compatibility throughout the system.

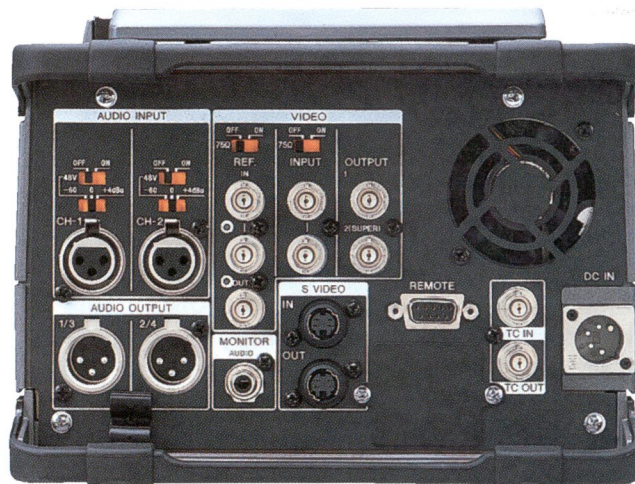
## Analog Component... DSBK-170

The DSR-70 provides analog interfaces for video and audio: composite video, S-Video and analog audio inputs/outputs. In addition, an analog component input/output is available with the optional DSBK-170 Analog Component Input/Output Board. Therefore, the DSR-70 can be integrated into conventional analog component editing systems.

Note: Optional interface boards (DSBK-140/150/160/170) cannot be used in combination with each other. However, these boards can be used together with the optional DSBK-180.



CONTROL PANEL



REAR PANEL (without optional interface boards)



## Comprehensive, Convenient Functions

### Full Tape Dubbing with ClipLink Log Data

The DSR-70 has full tape dubbing functionality which dubs recorded DVCAM tape information (video/audio/sub code) along with the ClipLink Log Data held in the cassette memory. This is achieved via the i.LINK interface or by a combination of SDTI(QSDI) and RS-422A interfaces. It is therefore easy to make duplicate tapes with the same ClipLink Log Data as the original master tape.

### 16:9 Aspect Ratio Capability

The DSR-70 can record and play back 16:9 aspect ratio pictures shot with a DXC-D30WS Digital Video Camera or a DSR-200A DVCAM One-piece.

Camcorder. This capability is available both through analog and digital interfaces. 4:3 mode to 16:9 wide screen mode or vice versa is selected using the menu.

### Process Control

The DSR-70 is equipped with a built-in processor for both analog and digital outputs, giving highly stable video signals. This processor provides control of video level, chroma level, set up (black) for the composite/component/S-Video/SDI outputs.

\* Sync and SC (Sub Carrier) phase adjustment is not available.

## Sophisticated Mechanism

### Dual-size Cassette Mechanism

The DSR-70 has a dual-size cassette mechanism which accepts both standard and mini size cassettes without any special adaptor.

### Quick, Responsive Mechanism

The DSR-70 combines quick response with high reliability through the use of direct reel drive and electronic tension servo. The FF/REW speeds are an impressive 85 times, while maximum search speed is 32 times with color playback. All these factors are significant in raising the efficiency of editing operations.

## Outstanding Mechanical and Cosmetic Design

The DSR-70 is superbly engineered for field applications: high quality VGA LCD monitor, excellent operability of its Jog/Shuttle dial and basic key layout. The use of diecast magnesium ensures the high durability with the lightweight body. The cosmetic design of the DSR-70 has the same look as the DNW-A25. When these two machines are in a docked configuration, their system operability and visual integration are in perfect harmony.

## Others

### Closed Caption Function

### Built-in Character Generator

### Self-Diagnostics and Error Log

### Hours Meter





# Peripheral Equipment & Optional Accessories



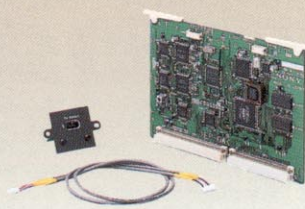
**DSR-130**  
Digital Camcorder



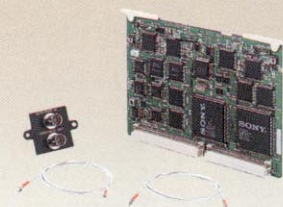
**DSR-300**  
Digital Camcorder



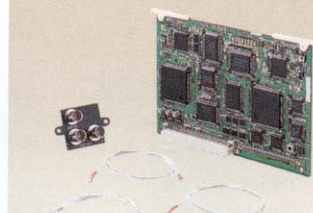
**DSR-200A**  
Digital Camcorder



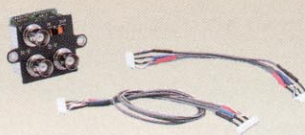
**DSBK-140**  
i.LINK/DV Input/Output Board



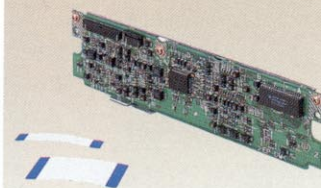
**DSBK-150**  
SDTI(QSDI) Input/Output Board



**DSBK-160**  
SDI Input/Output Board



**DSBK-170**  
Analog Component Input/Output Board



**DSBK-180**  
Dual Video Input Board



**BP-L60A/L90A**  
Rechargeable Lithium-ion Battery



**BC-L50**  
Battery Charger for BP-L60A/L90A



**BC-L100**  
Battery Charger for BP-L60A/L90A



**AC-DN2A**  
AC Adaptor



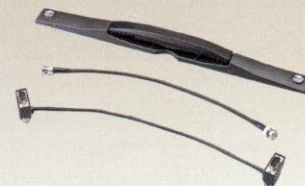
**AC-550**  
AC Adaptor



**CMA-8A**  
AC Adaptor



**RCC-5G/10G/30G**  
Remote Control Cable (5 m, 10 m, 30 m)



**BKNW-225**  
Docking Kit



**LC-DN220**  
Carrying Case



**PDVM-12ME/22ME/  
32ME/40ME**  
Digital Videocassette Tape (Mini size)



**PDV-34ME/64ME/  
94ME/124ME/184ME**  
Digital Videocassette Tape (Standard size)



**PDVM-32N/40N (Mini Size)  
PDV-64N/124N/184N (Standard Size)**  
Digital Videocassette Tape (Non IC type)



# Specifications

## GENERAL

Power requirements:	DC 12 V
Power consumption:	46 W (without options)
Operating temperature:	0 °C to 40 °C (32 °F to 104 °F)
Storage temperature:	-20 °C to 60 °C (-4 °F to 140 °F)
Operating humidity:	Less than 80 %
Storage humidity:	Less than 90 %
Mass:	5.8 kg (12 lb 12 oz)
Dimensions:	211 (W) x 149 (H) x 443 (D) mm (8 3/8 x 5 7/8 x 17 1/2 inches)
Tape speed:	28.193 mm/s
Recording/Playback time:	
Standard size:	More than 184 min. with PDV-184ME/184N
Mini size:	More than 40 min. with PDVM-40ME/40N
Fast forward/Rewind time:	
Standard size:	Less than 3 min. with PDV-184ME/184N
Mini size:	Less than 1 min. with PDVM-40ME/40N
Search speed:	x32, forward and reverse

## INPUT SIGNALS

### VIDEO (ANALOG)

Ref. Video (BNC x2, loop-through connection):	Composite, 1.0 Vp-p, 75 Ω, sync negative
Video (BNC x2, loop-through connection):	Composite, 1.0 Vp-p, 75 Ω, sync negative
Component (BNC x3)*:	
Y:	1.0 Vp-p, 75 Ω, sync negative
R-Y:	0.7 Vp-p, 75 Ω (75 %)
B-Y:	0.7 Vp-p, 75 Ω (75 %)
	* Using optional DSBK-170 Analog Component Input/Output Board
S-Video (DIN 4-pin x1):	
Y:	1.0 Vp-p, 75 Ω, sync negative
C:	0.286 Vp-p, 75 Ω (at burst level)

### VIDEO (DIGITAL)

i.LINK (DV In/Out) (6-pin x1)*:	IEEE1394-based * Using optional DSBK-140 i.LINK/DV Input/Output Board
SDTI(QSDI) (BNC x1)*:	Conforms to SDTI (270 Mbps), SMPTE 305M * Using optional DSBK-150 SDTI(QSDI) Input/Output Board
SDI (BNC x1)*:	Conforms to Serial Digital Interface (270 Mbps), SMPTE 259M * Using optional DSBK-160 SDI Input/Output Board

### AUDIO (ANALOG)

Audio (CH-1,2):	XLR 3-pin female x2
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## OUTPUT SIGNALS

### VIDEO (ANALOG)

Ref. Video (BNC x1):	0.286 Vp-p, 75 Ω, sync negative
Video 1/2 (SUPER) (BNC x2):	Composite, 1.0 Vp-p, 75 Ω, sync negative
Component (BNC x3)*:	
Y:	1.0 Vp-p, 75 Ω, sync negative
R-Y:	0.7 Vp-p, 75 Ω (75 %)
B-Y:	0.7 Vp-p, 75 Ω (75 %)
	* Using optional DSBK-170 Analog Component Input/Output Board
S-Video (DIN 4-pin x1):	
Y:	1.0 Vp-p, 75 Ω, sync negative
C:	0.286 Vp-p, 75 Ω (at burst level)

### VIDEO (DIGITAL)

i.LINK (DV In/Out) (6-pin x1)*:	IEEE1394-based * Using optional DSBK-140 i.LINK/DV Input/Output Board
SDTI(QSDI) (BNC x1)*:	Conforms to SDTI (270 Mbps), SMPTE 305M * Using optional DSBK-150 SDTI(QSDI) Input/Output Board
SDI (BNC x2)*:	Conforms to Serial Digital Interface (270 Mbps), SMPTE 259M * Using optional DSBK-160 SDI Input/Output Board

### AUDIO (ANALOG)

Audio (CH-1,2 or CH-3,4):	XLR 3-pin male x2
Audio monitor (R/L):	Phono jack x1
Headphones:	JM-60 stereo phone jack x1

### TIME CODE

Time code input:	BNC x1
Time code output:	BNC x1

### LCD

LCD display (x1):	6.4-inch VGA, 640 (H) x 480 (V)
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### SPEAKER

Built-in speaker (x1):	Monaural
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### REMOTE

RS-422A:	D-sub 9-pin (x1)
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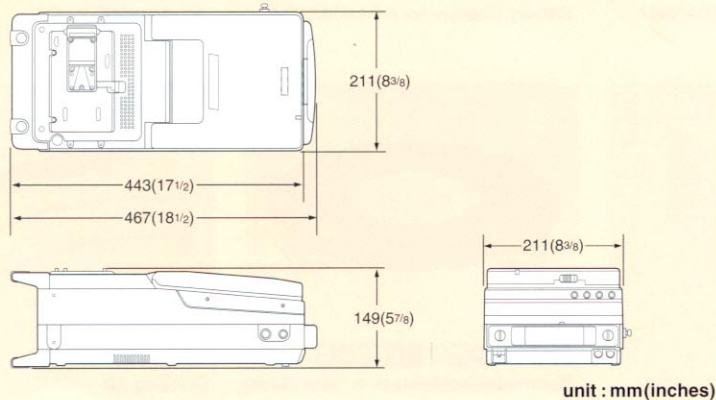
### OTHER

DC 12 V input:	XLR 4-pin x1
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### SUPPLIED ACCESSORIES

Operation Manual (x1), Carrying Belt (x1), Connector Cap (x1/per interface)
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## DIMENSIONS



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