

DSR-2000P
Digital Videocassette
recorder

Get the picture

this is not a rehearsal.

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SONY

DVCAM™

The All-in-One Editing Package for Absolute Quality and Performance

Video production styles have diversified in response to the sudden and tremendous growth in visual communication.

In this environment, it is clear that a VTR that totally meets the crucial demands for higher productivity and greater creativity in professional video production is eagerly needed.

That's why Sony is proud to present you with its top-of-line DVCAM Editing Recorder — the DSR-2000P. Ideal for professional use and ENG applications, this innovative unit is designed to support all DV (25 Mb/s) format recorded tapes, including DV tapes recorded in LP mode and DVCPRO tapes.





You will also enjoy industry-leading performance as the DSR-2000P incorporates a preread editing capability never before offered on a 1/4-inch (6.35 mm) VTR. Additional advantages include a built-in Jog/-Shuttle dial that allows two-machine editing and DMC (Dynamic Motion Control) for noiseless slow-motion playback.

Packed with professional features and sporting an easy-to-use front panel that puts consummate quality at your fingertips, the DSR-2000P is the perfect choice for today's demanding video production applications.

Optimum Performance

More Productivity

Greater Efficiency

The DVCAM Format

The DSR-2000P employs the DVCAM format, the professional extension of the world-wide standard DV format

Digital Component Recording for Excellent Picture Quality

The DVCAM format uses 8-bit digital component recording with a 5:1 compression ratio that is identical to the DV format. It also offers a sampling rate of 4:2:0 for excellent picture quality and superb multi-generation performance. The DVCAM format utilises an intra-frame

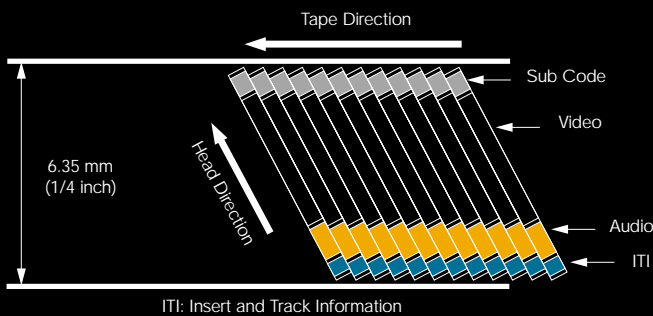
compression scheme and is based on DCT (Discrete Cosine Transform) techniques with each frame consisting of 12 tracks. Each track has video, audio, ITI (Insert and Track Information) and sub-code sectors. It is the combination of ITI – a reference signal used for precise tracking – and time code on the sub-code sector that helps to assure highly accurate editing performance.

High-Quality Digital Audio

The DVCAM format also offers superior digital audio performance comparable to CD quality, thanks to a wide dynamic range and excellent signal-to-noise ratio. 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.

Recording Capability of Up to Three Hours

DVCAM videocassette tapes are available in two sizes: standard and mini. The standard-size cassette provides a recording time of up to 184 minutes while the mini-size cassette provides up to 40 minutes. The long recording times of these very compact cassettes that have a tape width of 1/4-inch (6.35 mm) is made possible by advanced Metal Evaporated tape technology.



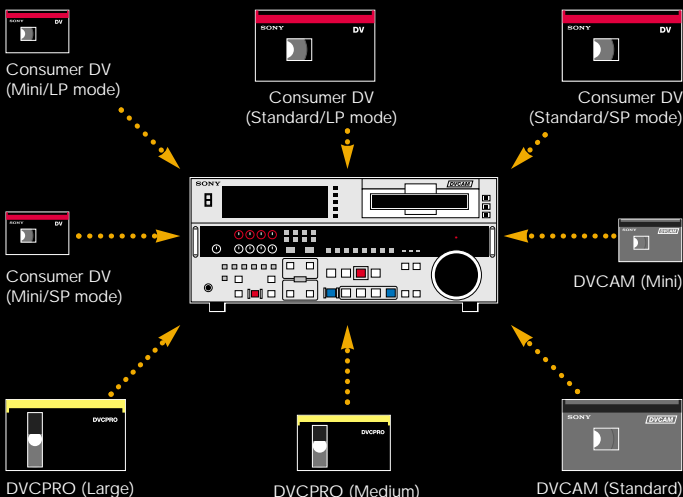
Track Pattern of the DVCAM Format



Mini

Standard

Playback Compatibility with All DV (25 Mb/s) Formats



Playback All DV (25 Mb/s) Format Tapes

The DSR-2000P boasts playback compatibility with all DV (25 Mb/s) format recorded tapes. This is especially useful because home-use DV products are now widely used in professional video applications due to their compact portability and superior picture quality. For maximum versatility in a wide range of video editing environments, the DSR-2000P is designed to playback DVCAM tapes, DV tapes recorded in both SP/LP modes, and even DVCPRO tapes* without any mechanical adaptor. Moreover, it is possible to use these tapes directly as editing source material or dub up to other formats. This handy compatibility saves time and improves productivity as there is no need to use different VTRs for each format.

* No interoperability with SDTI (OSDI™) and i.LINK™ (DV In/Out) interfaces.

Versatile Interfaces

Analogue Interfaces


Incorporating comprehensive analogue interfaces for both video and audio, the DSR-2000P interfaces with current analogue equipment to ensure smooth upgrading to future digital systems. Composite, component, S-Video (Y/C) for video, and XLR audio interfaces are provided.

Digital Interfaces

The DSR-2000P also has a full range of standard digital interfaces such as SDI, SDTI (QSDI™) and AES/EBU, as well as optional i.LINK (DV In/Out) and SDTI-CP (MPEG Out)* interfaces.

Taking advantage of these digital interfaces, the DSR-2000P offers full access to a wide variety of digital equipment. This includes SDI-based editing systems with Betacam SX™ or Digital BETACAM™ VTRs, cut editing systems with the DSR-500WSP DVCAM Camcorder or consumer DV camcorder via i.LINK, and many more.

* The SDTI-CP (MPEG Out) interface will be available in the future.

- The SDTI (Serial Data Transport Interface) is defined as SMPTE 305M.
 - The SDTI (QSDI) is the DV compressed signal interface which is defined as SMPTE 322M.
 - i.LINK stands for IEEE1394-1995 standards and their revisions.
-  is the logo for products that implement i.LINK.

Remote Control Interface (RS-422A)

The DSR-2000P is fully equipped with an RS-422A interface that is the professional standard for professional editing. It allows the DSR-2000P to interface with Sony VTRs, editing controllers and the Sony EditStation™ non-linear editing system.

16:9 Aspect Ratio Capability

By receiving a wide aspect ID signal, the DSR-2000P records and plays back 16:9 aspect ratio pictures shot with the Sony DXC-D30WSP Digital Video Camera, DSR-500WSP or DSR-PD100AP DVCAM Camcorder.

Process Control

To provide highly stable video signals, the DSR-2000P is equipped with process control for both analogue and digital outputs. This provides accurate control of video level, chroma level, chroma phase, black level, Y/C delay, Sync phase and SC (Sub Carrier) phase for composite, component, S-Video and SDI outputs.

These can be also adjusted from an optional UVR-60P TBC Remote Control Unit through Video Control port (D-sub 15-pin) on the rear panel.

Comprehensive,

VITC

In addition to TC, VITC (Vertical Interval Time Code) is supported by the DSR-2000P. Since the VITC data is stored in a different position of the tape to that of TC, the DSR-2000P handles two kinds of TC data.

Channel Condition Monitoring

The DSR-2000P has a three-colour channel condition indicator, with each colour representing a particular error rate threshold level. This function enables you to quickly recognise the condition of a VTR or tape for more reliable editing operation.



Process Control



Channel Condition Monitoring



DSR-2000P Rear Panel
(with optional DSBK-190)

Convenient Functions

Built-in Signal Generator

Equipped with a built-in signal generator, the DSR-2000P can generate colour bars or black burst for video, and 1 kHz tone or mute for audio. This is very convenient for creating pre-stripped tapes before editing.

Audio Level Control

In both recording and playback modes, audio levels can be adjusted with the control knobs on the front panel.

Dial Menu Operation

The DSR-2000P incorporates an initial set-up menu that provides easy accessibility and simplified operation. This set-up menu can be scrolled and modified by the search dial while monitoring Composite Video Out 3, SDI Video Out 3 or the time counter display.

Key Inhibit & Rec Inhibit

To help prevent accidental operation, the DSR-2000P is equipped with Key and Rec

Inhibit functions. The Key Inhibit function disables all keys while the Rec Inhibit function makes it impossible to record onto a tape.

Flexible Input Selection

For greater flexibility during input selection, the DSR-2000P allows various combinations* of video and audio signals to be input. It is possible to select the digital interface for video and the analogue interface for audio.

* The i.LINK cannot be combined with other signal interfaces.

When SDTI (OSDI) is selected as the audio input, the video signal is assumed to be SDTI (OSDI). However, when it is selected as the video input, other signal interfaces can be selected for the audio input.

Universal Powering System

The DSR-2000P employs a universal powering system that enables the use of AC 100 V to 240 V power sources.

ClipLink™ Operation

The DSR-2000P supports the ClipLink system that conveys shooting data into the digital production process. During acquisition with the Sony DSR-130P, DSR-300P or DSR-500WSP DVCAM Camcorders, the in-point/out-point time code data of each shot and its OK/NG status are recorded in the cassette memory of the DVCAM tape. These can be changed later on the DSR-2000P while viewing the character display of the ClipLink Log Data on the monitor. Also, by adding in/out-points from the front panel, the DSR-2000P records these as newly created Mark In/Out points. What's more, you can easily cue up to the designated points (Mark In points/Cue address) while viewing the ClipLink Log Data to perform a quick picture search.

The ClipLink Log Data can then be used in the creation of an ideal non-linear editing suite by integrating the DSR-2000P with the EditStation system.

Highly Functional Front Panel Design

Incorporating a handsomely designed front panel with a Jog/Shuttle dial and full editing keys, the DSR-2000P provides a variety of professional features, clearly making it the leading-edge product in the DSR Series.

Sophisticated Mechanisms



Quick, Responsive Mechanism

Quick response is an essential requirement for professional editing and the DSR-2000P provides this through the use of a reliable direct reel and drum motor mechanism. For example, in switching STILL mode to PLAY mode, response is exceptionally quick, especially for audio playback. Fast forward and rewind speeds are an impressive 85 times with a maximum search speed of 60 times during colour playback.

Easy Maintenance

The DSR-2000P provides easy servicing and maintenance by incorporating a self-diagnostics function, error log and hours meter. Also, thanks to its highly durable drum, the DSR-2000P has an extended drum replacement interval (2,000 hours*).

* Recommended figure.

Triple-size Cassette Compartment

The DSR-2000P incorporates a newly designed triple-size cassette compartment to ensure compatibility with DV (25 Mb/s) format recorded tapes of all sizes and types. Thanks to this feature, it is possible to use standard- and mini-size consumer DV and DVCAM cassettes as well as medium DVCPRO cassettes without a mechanical adaptor. The cassette compartment is also designed for durability, providing optimum performance in demanding editing environments.

And more...

Full Tape Dubbing with ClipLink Log Data Built-in Character Generator

Excellent Editing Performance

Preread Editing Capability

Thanks to newly developed digital processing, the DSR-2000P offers preread editing*, a function never before available on a 1/4-inch (6.35 mm) VTR. Since preread heads are positioned ahead of the record heads on the drum, they scan previously recorded video and audio signals that are then recorded back onto the same track. This feature provides many advantages such as A/B roll editing

(MIX and WIPE only) with two VTRs and a sound-on-sound capability as well as an audio cross-fade function for clean audio transitions at editing points. In addition, audio mix/swap and over-dubbing of audio are available without the delay between video and audio.

* Not available for SDTI (QSDI) and i.LINK interfaces as these handle compressed signals.

DSBK-200 Control Panel with BKNW-121



DMC (Dynamic Motion Control)

Equipped with Sony's innovative DMC, the DSR-2000P provides noiseless slow-motion playback from -1 to +1 times normal speed in forward and reverse. The speed step is also available at one percent. For a two-machine editing system, the DSR-2000P can memorise the variable speed range of a designated portion on the player side and execute editing* with slow-motion images. Additionally, DMC makes it possible to control VTRs equipped with Dynamic Tracking (DT™) from the DSR-2000P.

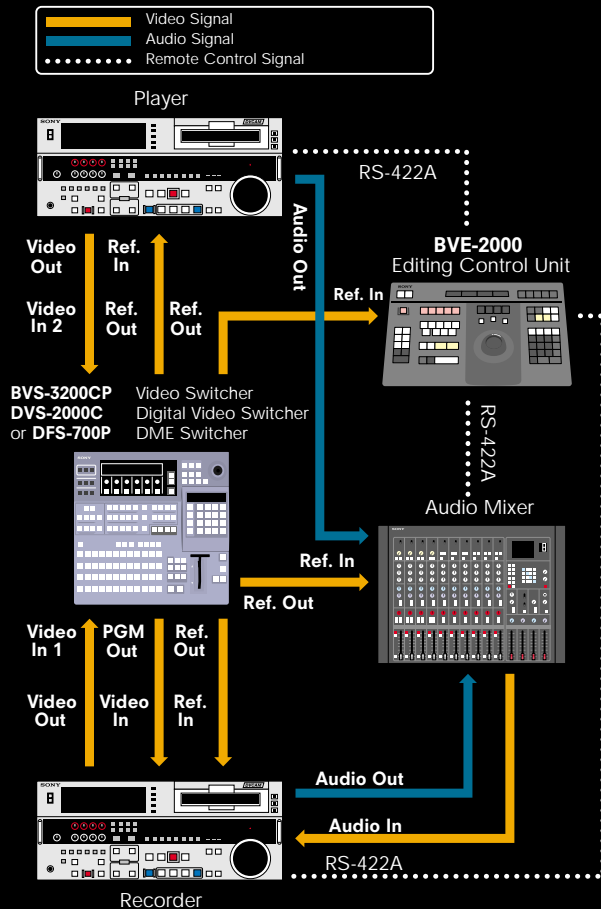
* The SDI is recommended for DMC editing. The SDTI (QSDI) and i.LINK interfaces are not suitable for this usage, since they handle the compressed signal.

VTR-to-VTR Editing

The front panel features a built-in Jog/Shuttle dial that provides convenient two-machine editing without external controllers. By connecting the DSR-2000P to VTR with an RS-422A or i.LINK™ (DV In/Out) interface, an editing system with an editing precision of ±0 frames is created. Additionally, the optional DSBK-200 Control Panel provides remote operation from a distance of up to 10 metres (approx. 33 ft.)

Wide Range of Digital Slow Speed

The DSR-2000P offers a variable speed playback function with the range of -1 to +1 times in forward and reverse. Within this wide range, the DSR-2000P plays back digital, noiseless, slow images and superbly smooth jog sound to make it easy to designate editing points. This feature can be applied when using any DV (25 Mb/s) format recorded tapes.



Preread Editing System

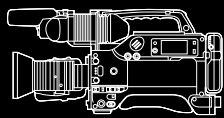


DSR-2000P Front Panel

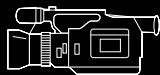
Application Examples

i.LINK-based Cut Editing System

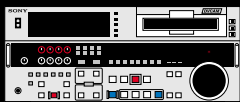
- Simple and efficient cut editing with a single cable connection
- Superior multi-generation picture and sound quality via an i.LINK interface



DSR-500WSP
DV CAM camcorder



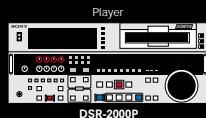
Consumer DV camcorder



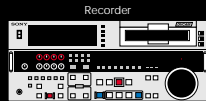
DSR-2000P

VTR-to-VTR Editing System

- Simple and efficient cut editing
- Superior multi-generation picture and sound quality via an i.LINK interface
- Space-saving design
- Remote operation from a distance of up to 10 metres via a DSBK-200



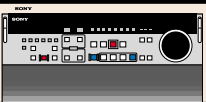
DSR-2000P



DSR-2000P

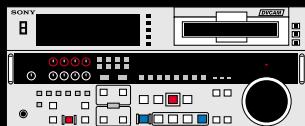


DSBK-200
with BKNW-121



Non-linear Editing System

- Degradation-free picture and sound quality by using an SDI or SDTI (QSDI) interface through the entire production process



DSR-2000P

SDI or
SDTI (QSDI)



Non-linear
Editing
System

RS-422A

Peripheral Equipment & Optional



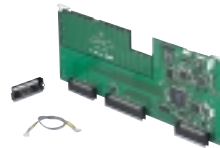
DSR-500WSP
Digital Camcorder



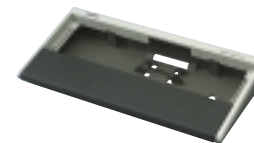
DSR-130P
Digital Camcorder



DSR-300P
Digital Camcorder



DSBK-190
i.LINK/DV Input/
Output Board



BKNW-121
Control Panel Case



DSBK-200
Control Panel



ES-3
EditStation



ES-7
EditStation



BVE-2000
Editing Control Unit



PVE-500
Editing Control Unit



DVS-2000C
Digital Video
Switcher



BVS-3200CP
Video Switcher



DFS-700P
DME Switcher



UVR-60P
TBC Remote
Control Unit



RMM-130
Rack Mount Kit



PDVM-32N/40N
Digital Videocassette
(Non IC type/Mini size)

PDV-64N/124N/184N

Digital Videocassette
(Non IC type/Standard size)

Accessories



RCC-5G/10G/30G

9-pin Remote Control Cable



CCF-3L(6P*-6P) / CCFD-3L(6P*-4P)

DV Cable (*with lock)

PDVM-12CL

Cleaning Cassette Tape
(Mini size)

PDV-12CL

Cleaning Cassette Tape
(Standard size)



PDVM-12ME/22ME/ 32ME/40ME

Digital Videocassette (Mini size)

PDV-34ME/64ME/ 94ME/124ME/184ME

Digital Videocassette
(Standard size)



PDVM-32MEM/40MEM

Digital Videocassette (Master
tape/Mini size)

PDV-64MEM/ 124MEM/184MEM

Digital Videocassette (Master
tape/Standard size)

Specifications

GENERAL

Power requirements	AC 100 to 240 V, 50/60 Hz
Power consumption	110 W
Operating temperature	5 °C to 40 °C (41 °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	18 kg (39 lb 10 oz)
Dimensions (W x H x D)	427 x 175 x 496.5 mm (16 7/8 x 7 x 19 5/8 inches)
Tape speed	28.221 mm/s
Recording/Playback time	
Standard size	184 min. with PDV-184ME/184N/184MEM 40 min. with PDVM-40ME/40N/40MEM
Mini size	PDVM-40ME/40N/40MEM
Fast forward/Rewind time	
Standard size	Less than 3 min. with PDV-184ME/184N/184MEM
Mini size	Less than 1 min. with PDVM-40ME/40N/40MEM
Search speed	
Shuttle mode	Still to ±60 times normal speed in forward and reverse
Digital slow mode	±1 times normal speed in forward and reverse

VIDEO PERFORMANCE

Band width (via analogue component I/O)	
Luminance	25 Hz to 5.5 MHz +1.0/-2.0 dB 5.75 MHz +0/-3.0 dB (Typical measurement)
Chrominance	25 Hz to 2.0 MHz +1.0/-2.0 dB
S/N ratio (via analogue component I/O)	More than 55 dB
K-factor (K2T, KPB)	Less than 2.0%
Y/C delay	Less than 30 ns

AUDIO PERFORMANCE

Frequency response	
2CH mode (48 kHz/16-bit)	20 Hz to 20 kHz +0.5/-1.0 dB
4CH mode (32 kHz/12-bit)	20 Hz to 14.5 kHz +0.5/-1.0 dB
Dynamic range	More than 90 dB
Distortion (THD + N)	Less than 0.05%

INPUT SIGNALS

VIDEO (ANALOGUE)	
REF. Video (BNC x 2, loop-through connection)	Composite, 1.0 Vp-p, 75 Ω, sync negative
Video (BNC x 2, loop-through connection)	Composite, 1.0 Vp-p, 75 Ω, sync negative
Component (BNC x 3)	
Y	1.0 Vp-p, 75 Ω, sync negative
R-Y	0.7 Vp-p, 75 Ω (100%)
B-Y	0.7 Vp-p, 75 Ω (100%)
S-Video (DIN 4-pin x 1)	
Y	1.0 Vp-p, 75 Ω, sync negative
C	0.3 Vp-p, 75 Ω (at burst level)
VIDEO (DIGITAL)	
SDI (BNC x 2, active-through connection)	
	Conforms to Serial Digital Interface (270 Mb/s), ITU-R BT.656
SDTI (QSIDI) (BNC x 1)	
	Conforms to SDTI (270 Mb/s), SMPTE 305M/322M
i.LINK (DV In/Out)(6-pin x 1)	
	IEEE1394-based * Using optional DSBK-190 i.LINK/DV Input/Output Board
AUDIO (ANALOGUE)	
Audio (XLR 3-pin female x 4)	-6/0/+4 dBu, 600 Ω on/off/ -60 dBu, high impedance

AUDIO (DIGITAL)

AES/EBU (BNC x 2)	75 Ω, unbalanced
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TIME CODE

Time Code In (BNC x 1)	0.5 Vp-p to 18 Vp-p, 3 kΩ, unbalanced
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OUTPUT SIGNALS

VIDEO (ANALOGUE)

REF. Video (BNC x 1)	0.3 Vp-p, 75 Ω, sync negative
Video 1/2/3(SUPER) (BNC x 3)	Composite, 1.0 Vp-p, 75 Ω, sync negative

Component (BNC x 3)

Y	1.0 Vp-p, 75 Ω, sync negative
R-Y	0.7 Vp-p, 75 Ω (100%)
B-Y	0.7 Vp-p, 75 Ω (100%)

S-Video (DIN 4-pin x 1)

Y	1.0 Vp-p, 75 Ω, sync negative
C	0.3 Vp-p, 75 Ω (at burst level)

VIDEO (DIGITAL)

SDI (BNC x 3)	Conforms to Serial Digital Interface (270 Mb/s), ITU-R BT.656
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SDTI (QSIDI) (BNC x 1)

	Conforms to SDTI (270 Mb/s), SMPTE 305M/322M
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i.LINK (DV In/Out) (6-pin x 1)

	IEEE1394-based * Using optional DSBK-190 i.LINK/DV Input/Output Board
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AUDIO (ANALOGUE)

Audio (XLR 3-pin male x 4)	+4/0/-6 dBu (selectable by menu)
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Monitor (RCA x 1)

	-11 dBu, 47 kΩ, unbalanced (-18 dBFS)
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Headphone (JM-60 headphone jack x 1)

	-∞ to -13 dBu, 8 Ω, unbalanced (-18 dBFS)
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AUDIO (DIGITAL)

AES/EBU (BNC x 2)	75 Ω, unbalanced
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TIME CODE

Time Code Out (BNC x 1)	2.2 Vp-p, 75 Ω, unbalanced
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REMOTE

RS-422A	D-sub 9-pin (female) x 2
Video Control	D-sub 15-pin (male) x 1
Control Panel	D-sub 15-pin (female) x 1

SUPPLIED ACCESSORIES

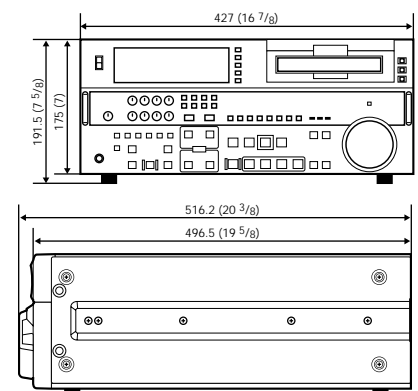
AC power cord x 1

Operating instructions x 1

RCC-5G 9-pin remote control cable x 1

Dimensions

unit: mm (inches)



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