D-9 CAMCORDER

Dy-70U

Low Cost Lightweight ENG/EFP Digital Camcorder Offering Superior Image Quality and Advanced Features

Shown with optional accessories
Top-quality D-9 Video-capturing Solution Packed with Innovations and Delivering Exceptional Value

JVC’s DY-70U camcorder is a high-performance tool for ENG and EFP users that offers enhanced control and creativity under all conditions, yet comes in an exceptionally economical package. Featuring JVC’s world-renowned D-9 format with a 124-minute recording time, a 50Mbps data rate, and a 4:2:2 signal, the DY-70U delivers stunning picture quality (The camera section delivers 800 TV lines). And it features the high sensitivity (F11 at 2000 lux) and the wide dynamic range (600%) of high-end cameras for a fraction of the cost. It also offers flexibility — in LoLux mode it captures pictures in low-light conditions (0.75 lux with F1.4), and it comes packed with powerful features designed for today’s competitive working environment. The DY-70U — setting a new standard.

**COMPONENT DIGITAL**

**4:2:2**

**D-9**

Advanced 1/2-inch Interline CCD  
F11 at 2000 Lux  
800 TV Lines (In-Camera, No Output)  
600% Wide Dynamic Range  
LoLux—0.75 Lux at F1.4
Performance for Production Professionals

Superior Image Reproduction

D-9 Format
JVC’s D-9 format has established a reputation as a workhorse format. Broadcasters and production professionals rely on D-9 to deliver picture quality rivaling the most expensive digital formats and reliability superior to any video cassette format, analog or digital.

High-quality 4:2:2 Component Digital Recording
With an extremely mild, perceptually lossless 3:3:1 compression ratio and a data rate of 50 Mbps, D-9 can capture even the most challenging picture in all its splendor without compression artifacts such as pixel noise, edge defects, blockiness and multi-generation degradation produced when 5:1 compression systems record difficult pictures. D-9’s low compression intra-frame processing ensures beautiful high resolution pictures when cascading compression CODECs such as MPEG-2 mastering for DVD.

Highly efficient 50 Mbps intra-frame encoding has emerged as the standard reference for mainstream television production. To maintain superb picture quality from acquisition to production, all D-9 products use a data rate of 50 Mbps.

In 1998, a joint SMPTE/EBU task force test results show that D-9 provides:
• Quality identical to that produced by Digital Betacam
• Superior quality to that found in Beta-SP
• Better quality to 50 Mbps MPEG-2 1 frame only compression

Three High-Density 1/2-Inch CCDs
Featuring three advanced 1/2-inch interline transfer CCDs and a 1/2-inch F1.4 RGB prism, the DY-70U delivers exceptionally sharp pictures. The high-resolution DY-70U features 380,000 effective pixels (768H × 493V). JVC’s innovative MICRO-LENSES, which are supported by a large light shield to reduce reflections and light leakages for minimal vertical smear, ensure highly efficient light conversion with a sensitivity of F11 at 2,000 Lux.

True Digital Camcoders
The DY-70U is a fully integrated digital camcorder which captures, processes, and records only digital signals for studio-quality acquisition. The result is sharply improved picture sharpness and image quality.

Heavy-duty Tape Transport Mechanism with Die-cast Magnesium Chassis
The heavy-duty tape transport system of the DY-70U ensures high-quality pictures. Moreover, a die-cast magnesium chassis ensures durable, rigid support for both mechanism and electronics, while its integrated drum base improves linearity.

14-bit Digital Signal Processor
The DY-70U applies JVC’s new DSP with advanced 14-bit video processing, which brings out natural details, eliminates spot noise, and accurately reproduces dark areas.

600% Wide Dynamic Range
Multi-stream parallel digital pipeline processing at 40 MHz creates an ultra-smooth gamma curve calculated using a true log scale algorithm. The result is a dynamic range of 600% to accurately reproduce fine details and colors in areas of both shadows and highlights.

LOLUX 0.75 Lux
When activated, the LOLUX mode increases sensitivity with almost no increase in noise. LOLUX lets you shoot in low light conditions, so you can capture high-quality video footage with excellent color balance at just 0.75 lux illumination.
**Operator Friendly Design**

**Compact and Weighs just 15 lbs.**
The compact DY-70U weighs only 15 lbs., including lens, viewfinder, battery pack, and tape, and that weight is carefully balanced for effortless hand-held shooting.

**Die-cast Magnesium Body**
The DY-70U camcorder features a die-cast magnesium body and frame, which offers the benefits of exceptionally low weight, but with improved rigidity and durability for professional use. It is also ergonomically engineered for maximum operator comfort and utility. It also incorporates engineering innovations which sharply reduce drum noise for quiet operation.

**Full Auto Shooting**
The Full Auto Shooting Mode provides point-and-shoot ease of operation, leaving the operator simply to zoom, focus, and press the record button. Activating the Full Auto Shooting sets the camera to the Auto Iris Mode, even if the lens is set to manual. Also activated is Automatic Video Level Control (ALC), along with Extended Electronic Iris (EEI) and Full Auto White, which provide both variable gain and variable shutter. So the operator can shoot continuously from a dark area to a bright area without changing gain, iris, or ND filter.

**Other Professional Features**

**D-9 Video Tape**
The DY-70U captures and stores up to 124 minutes of high-resolution on a high-density 1/2-inch tape which employs an advanced metal-particle formulation. Tape running speed is 57.8 mm/s with a long recording time of 124 minutes. No other digital media offers the length of record/playback time and durability of D-9 video cassettes.

**Black Stretch/Black Compress**
The Black Stretch/Black Compress function enhances or compresses reproduction of black areas on the screen.

**Highlight Chroma Processing**
The DY-70U has built-in Highlight Chroma Processing to maintain color saturation in highlights. The result is natural color reproduction even in bright highlight portions of the picture.

**Detail Correction**
A user control is provided to switch the mixture of in-band and out-band correction, to adjust the picture sharpness and produce a pleasing picture.

**Tape/Battery Remaining Indicator**
The Tape/Battery Remaining Indicator means you always know exactly how much tape and battery power remains, so that you can change tape and battery before it is too late!

**Built-in Phantom Microphone Power**
Phantom power can be supplied to optional microphones through XLR connectors and switched off to each channel when not in use.

**Time Code Reader/Generator and Time Date Generator**
Two SMPTE-standard time code generators digitally record independent time code streams in the sub-code area. The main time code generator can be preset by the operator or slave-locked to an existing time code on the tape, or to an external master time code generator for shooting with more than one camera. The secondary time code automatically records time code data corresponding to date and time of day. D-9 editing decks can accurately read both time codes at any speed.
Continuous Auto Black (CAB)
JVC’s Continuous Auto Black (CAB) circuit continually corrects black balance by sampling a CCD’s optical black. CAB assures perfect black balance in a changing environment without the operator having to interrupt shooting.

Automatic Level Control (ALC)
ALC with Extended Electronic Iris allows continuous automatic shooting in all light levels, without the operator having to switch gain setting or an ND filter.

Variable Scan View
The Variable Scan View function lets you capture flicker-free footage of a video or data display screen that has a different scan speed than the camera. The DY-70U has a scan speed of 60.1 Hz to 2084.6 Hz.

High-quality Audio Reproduction
4-channel PCM Audio
The DY-70U has four independently editable, high-quality, 16-bit, 48 kHz sampling digital audio channels, with a dynamic range of more than 80 dB. Audio levels for CH1 and CH2 may be displayed on the viewfinder; their respective controls are situated up front within easy reach of the operator. Each channel may be selectively operated in the Auto Mode where a switchable limiter compressor maintains high quality automatic level control.

Built-in Monitoring Speaker
A side-mounted speaker lets you monitor audio in playback and record modes without headphones. And the warning alarm are also output through the speaker.

Other D-9 Models

BR-D860U Full Quality Low Cost D-9 Editing Recorder
- 4:2:2, 8-bit, 50 Mbps, D-9 signal processing
- High-quality 2-channel digital sound with 16-bit, 48 kHz sampling
- Advanced pre-read function with 5H window (only BR-D860U)
- Instantaneous-lock function
- Viterbi circuit
- Self-diagnosis function via RS-232C interface

BR-D560U Full Quality Low Cost D-9 Source Recorder

DY-90U D-9 Camcorder
DY-90WU D-9 Camcorder with Variable Aspect Ratio (4:3 & 16:9)
- Three high-density 2/3-inch CCDs delivering 380,000 effective pixels (DY-90U) and 480,000 effective pixels (DY-90WU)
- Setup Box function
- 4 optical filters: 3200K/5600K/5600K+1/16ND, EFFECT (STAR)
Nomenclature and Functions of Major Parts
D-9 CAMCORDER DY-70U

NEW MICROPHONE
MV-P615U
NEW MICROPHONE
MV-P616U
MONO/STEREO MICROPHONE
MV-P612U

1.5" VIEWFINDER
VF-P115E
1.5" VIEWFINDER
VF-P116E

ZOOM LENS
YH14x7.3K12U
YH18x6.7K12U
S14x7.5B12U
S17x6.6BRM
S19x6.5B12U

FOCUS MANUAL UNIT
HZ-FM13U (FUJI)
HZ-FM15U (CANON)

ZOOM SERVO UNIT
HZ-ZS13BU

TRIPOD BASE

MONITOR

FOCUS MONITOR

MONITOR OUTPUT

[DA2 AUDIO SELECT] switch
[DA3 AUDIO SELECT] switch
[DA4 AUDIO SELECT] switch

BATTERY NP-1 TYPE

NB-G1 (4 PACK) BATTERY CHARGER
AC POWER ADAPTER
AA-G10E (B)

BATTERY
NP-1 TYPE

ANTON BAUER BATTERY
(AC POWER ADAPTER)
AA-G10E (B)

ANTON BAUER BATTERY
HOLDER (QRQ27)

AC POWER ADAPTER
AA-G10E (B)

(Note: Remove the battery holder of camcorder (BH-P27 Type) to install the Anton Bauer battery holder (QR Gold Mount)).

System Configuration

Viewfinder mount base, sliding securing ring
[VF] Viewfinder connector
[DA2 IN] DA2 (Microphone) input connector
[LEN] control connector
[ZEBRA] switch
[VTR] trigger button (record start/stop button)
[AUTO WHITE/ACCU FOCUS] switch
Lens mounting ring/Lens lock lever
[FILTER] Color temperature conversion filter control knob
[DA4 IN] DA4 (Microphone 1) input connector (6-pin)
Mic holder mounting screw holes
[GEN LOCK IN] connector (BNC)
[TC IN] connector (BNC)
[TC OUT] connector (BNC)
[MONITOR OUTPUT] connector (BNC)
[MONITOR] Output switch CAM/VTR switch
Cassette cover
[VTR] trigger button (record Start/Stop button)
[POWER] switch

[DA2 AUDIO LEVEL] control
[DA2 AUDIO LEVEL] control
[MONITOR] Audio monitor control
[ALAR] control
[OUTPUT] Color bar/Camera/Auto knee switch
[BLACK] Black stretch/black compression switch
[LOUX] on/off button
[SHUTTER] switch
[FILE] switch
[MENU] button
[ITEM] button
[SET/DISPLAY] button
[DOWN] button

[DA1 IN] DA1 (Microphone) input connector (6-pin)
[DA2 IN] DA2 (Microphone) input connector (6-pin)

[DA3 IN] DA3 input connector (XLR 3-pin)
[DA3 IN] DA3 input connector (XLR 3-pin)

[DA4 IN] DA4 (Microphone 1) input connector (6-pin)

[DC IN] connector (XLR 4-pin)
[DC OUT] connector
[EARPHONE] jack

[DA1 IN] DA1 input connector (XLR 3-pin)

[REC/FREE] run switch
[TC DISP] switch
[REC] button
[REW] button
[FF] button
Back tally lamp
[DC IN] connector (XLR 4-pin)
[DC OUT] connector
[EARPHONE] jack
[DA1 IN] DA1 input connector (XLR 3-pin)

Battery case release button
Battery case

DOLLY
TP-P205U
CARRYING CASE
CB-P90U

TRIPPOD
TP-P300U
VC-710 (5m)
AC POWER ADAPTER
(NB-G1 BATTERY CHARGER)
AA-P250E

TRIPPOD BASE

ANTON BAUER BATTERY
(PRO PAC. MAGNUM,
TRIMPAC, etc.)

VC-710 (5m)
AC POWER ADAPTER
(NB-G1 BATTERY CHARGER)
AA-P250E

ANTON BAUER BATTERY
(AC POWER ADAPTER)
AA-G10E (B)

BATTERY
NP-1 TYPE

NB-G1 (4 PACK) BATTERY CHARGER
AC POWER ADAPTER
AA-G10E (B)

BATTERY
NP-1 TYPE

ANTON BAUER BATTERY
HOLDER (QRQ27)

AC POWER ADAPTER
AA-G10E (B)

Note: Remove the battery holder of camcorder (BH-P27 Type) to install the Anton Bauer battery holder (QR Gold Mount).
SPECIFICATIONS

**CAMERA SECTION**
- Image pickup device: 1//2-inch interlacing CCDs
- Color separation optical system: 3-color separation prisms
- Number of effective pixels: 380,000 pixels (768 H) x 494 (V)
- Color system: NTSC (R-Y, B-Y encoder)
- Color bars: SMPTE type color bar
- Sync system: Internal sync, External sync (8V5 or 8B)
- Lens mount: Bayonet system (compatible with 1//2-inch lenses)
- Optical filter: 3200K, 5600K + 1/8ND, 5600K + 1/64ND
- Sensitivity: F11, 2000 lx
- Registration: Horizontal dual-edged, Vertical 2H
- Frequency response: 100, 250, 500, 1000, 2000 Hz
- Gain: 0.05% or less (excluding lens distortion)
- Gain: 0.75 lx with F1.4
- Shutter speed: 540 lines (CCIR limit)
- Resolution: More than 500 lines
- Storage temperature: –20°C to +60°C
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Operating humidity: 30% to 80% RH
- Number of effective pixels: 380,000 pixels (768 H) x 494 (V)
- Sampling frequency: 48 kHz
- Quantization: 16-bit
- LTC output: 6V AC (100, 250, 500, 1000, 2000 Hz)
- LTC input: 60 dBs, balanced, +48 V XLR-3-pin (select the switch)
- TC signal: Compliant with SMPTE part 12
- Main Generator: LTC, color signal: SMPTE part 12
- LTC input: 60 dBs, balanced, +48 V XLR-3-pin (select the switch)
- TC signal: Compliant with SMPTE part 12
- Response equivalent to camera with 800 TV lines (H) or 540 TV lines (V) via monitor output
- Specifications:
  - FF/rewind time: Approx. 4 minutes (With a DS-64)
  - Record/Play time: 104 minutes (With a DS-124 cassette)
  - Tape width: 1/2-inch
  - Tape speed: 30W (Max.)
  - DC input: 12 V DC (11 to 15 V DC)
  - Power consumption: 30W
  - Mass: Approx. 10.6 lbs (4.8 kg) (main unit only)
  - Power consumption: 12 V DC, 3.5W

**ACCESSORIES**
- Optional accessories:
  - AC Power Adapter:
  - Battery Charger:
  - Lithium ion Battery:
  - Stereo/Super Directional Microphone:
  - Mic Holder:

**OPTIONAL ACCESSORIES**
- VF-P116U Viewfinder
- VF-P115U Viewfinder
- YH14 x 7.3K12U (CANON) 14:1 Power Zoom Lens
- YH16 x 6.7K12U (CANON) 18:1 Power Zoom Lens
- S14 x 7.5B12U (FUJINON) 14:1 Power Zoom Lens
- S19 x 6.5B12U (FUJINON) 19:1 Power Zoom Lens
- AA-P250U AC Power Adapter/Charger
- AA-G10U Battery Charger/AC Power Adapter
- NB-G1U Ni-Cd Battery (2.2 Ah)
- NP-1 Type Lithium ion Battery
- MV-P616U Stereo/Super Directional Microphone
- KA-A90U Mic Holder

**VTR SECTION**
- Form factor: 1.5"
- Tape width: 12.65 mm
- Tape speed: 1/2-inch
- Recent/Play time: 104 minutes (With a DS-124 cassette)
- FF/rewind time: Approx. 4 minutes (With a DS-64)
- Sampling frequencies:
  - Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz
- Resolution: 540 lines (CCIR limit)
- Quantization: 8-bit
- S/N: More than 52 dB (during BR-D80U/D550U reproduction with component output)
- [AUDIO]
  - Number of channels for recording: PCM x 4, cue track x 2
  - Sampling frequency: 48 kHz
  - Frequency response: 20 Hz to 20 kHz (PCM)
  - Dynamic range: More than 85 dB (PCM)
  - Gain: 0 dBs, low impedance, (XLR-5), balanced
  - Gain: 60 dBs, unbalanced (XLR-5), balanced
  - Gain: –60 dBs/3 k (select the switch)
  - Gain: –4 dBs/10 k (select the switch)
  - Gain: –48 V (ON/OFF switch)
  - Gain: –20 Hz to 20 kHz (PCM)
  - Gain: –20 kHz (PCM)
  - Gain: –20 Hz to 20 kHz (PCM)
  - Gain: –20 Hz to 20 kHz (PCM)

**INPUT/OUTPUT SIGNALS**
- Video input/output: 1 V (p-p), 75 Ω (BNC), Composite video signal
- Lens: 12-pin connector
- DA4 MIC input: –52 dBs, unbalanced, 6-pin
- DA2 MIC input: –60 dBs, balanced, +48 V XLR-3-pin
- DA1/DA3 input: +4 dBs/10 kΩ (select the switch)
- DC input: +4 dBs/10 kΩ (select the switch)
- Audio output: 0 dBs, low impedance, (XLR-5), balanced
- Ears: 0 to –17 dBs, at 8 Ω load (Monaural mini jack)
- S/N: More than 52 dB (during BR-D80U/D550U reproduction with component output)
- Auxiliary power output: 12 V DC, max. 0.1A (11 to 15 V DC)

**GENERAL**
- Power consumption: 30W
- Mass: Approx. 10.6 lbs (4.8 kg) (main unit only)
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Operating humidity: 30% to 80% RH
- Storage temperature: –20°C to +60°C
- Label (for tape): 10
- Warranty Card: 1
- Instructions: 1
- Tally: Top tally (can be defeated), REC lamp/Warning; Low battery (camera power), VTR’s tape end and malfunctions
- Power consumption: 12 V DC, 3.5W
- Operating temperature: 23°F to 113°F (–5°C to +45°C)
- Weight: 1.7 lbs (750g)

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- Lens: 12-pin connector
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- DA2 MIC input: –60 dBs, balanced, +48 V XLR-3-pin
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**ACCESSORIES**
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- S14 x 7.5B12U (FUJINON) 14:1 Power Zoom Lens
- S19 x 6.5B12U (FUJINON) 19:1 Power Zoom Lens
- AA-P250U AC Power Adapter/Charger
- AA-G10U Battery Charger/AC Power Adapter
- NB-G1U Ni-Cd Battery (2.2 Ah)
- NP-1 Type Lithium ion Battery
- MV-P616U Stereo/Super Directional Microphone
- KA-A90U Mic Holder

Design and specifications subject to change without notice.

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