

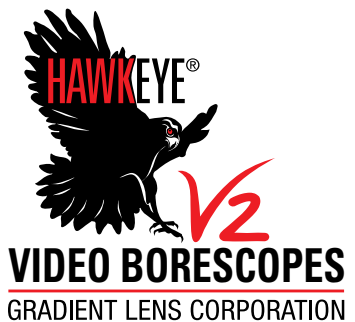
HAWKEYE V2 VIDEO BORESCOPIES

*The next generation of fully-portable,
articulating videoscopes!*

Gradient Lens Corporation®



Your Eye Inside™



*Your Complete Source for
Testing Equipment Since 1969!*

www.BergEng.com
Berg Engineering & Sales Company, Inc.

1-847-577-3980
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**FAST, PORTABLE,
VISUAL INSPECTION... ANYWHERE!**



BRIGHT, CRISP, CLEAR IMAGES!

...and image capture at the touch of a button



Gearbox



Complex Casting



Hawkeye® V2 Video Borescopes are fully portable, finely constructed, and deliver clear, bright high resolution photos and video! The 5" LCD monitor allows comfortable viewing, and intuitive, easy-to-use controls provide photo and video capture at the touch of a button! V2's have a wide, 4-way articulation range, and are small, lightweight, and priced starting at only \$8995. V2's are available in both 4 and 6 mm diameters. Optional 90° Prism and Close-Focus adapter tips.



Aircraft Combustion Chamber



Engine Valve



Orbital Weld



Combustion Chamber



**Best value on the market...
Made in the USA**

Hawkeye V2's Deliver:

- Sharp, Clear Photos & Video
- Large 5-inch LCD Monitor
- Easy-to-Use Controls
- Annotation Feature
- Rugged Tungsten Sheathing
- Quality Construction
- Precise 4-Way Articulation
- Fully portable... under 3 lbs.
- Starting at only \$8,995



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QUALITY CONSTRUCTION

Large, Bright, High-Res, 5" Display

SD Memory Card



Annotation Feature

Close-Focus Tip (Optional)

90° Prism Tip (Optional)



Smooth, Rugged Tungsten 4-Layer Sheathing

V2 LED Light Source

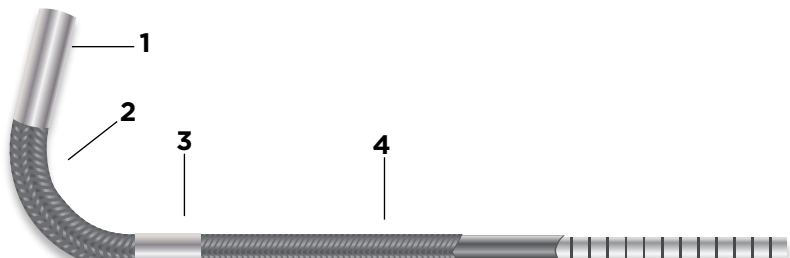
Independent 4-Way Articulation

Easy Capture of Video & Still Images



Up to 6 Meter Lengths

4 and 6 mm Diameters
.157" and .240" 



1. Ruggedized camera and optics.
2. Custom-designed articulation collars for smooth function.
3. Laser welded joints for strength.
4. Durable multi-layer construction with Tungsten braid outer layer and stainless

EASY TO USE

Easy Operator Controls

Simple, user-friendly controls, and on-screen menus, make operation easy. Smooth, precise, 4-way articulation is a hallmark of the V2's two, independent, articulation controls.

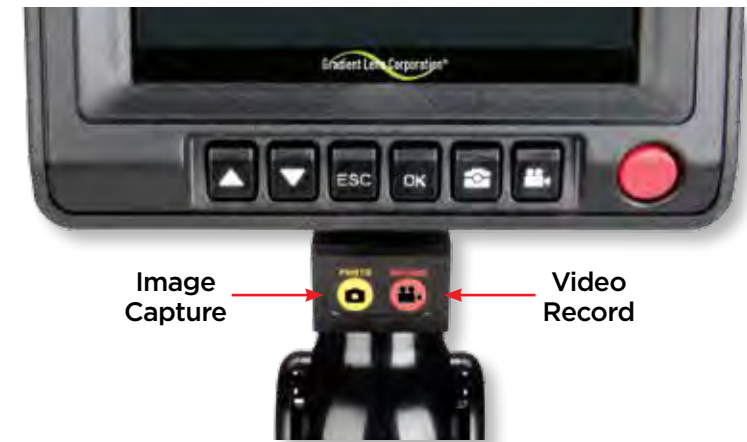
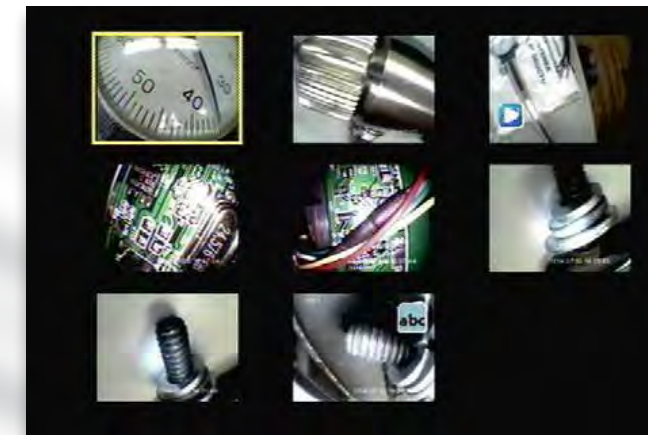


Image Capture

Video Record

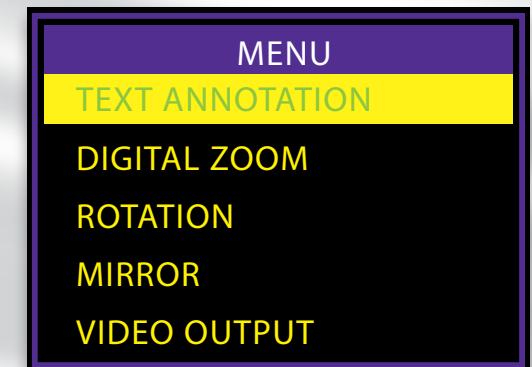


Fast, Intuitive Capture of Video and Stills

Photo and Video capture buttons quickly record any inspection you want to document. Images can also easily be annotated, sorted, stored, and transferred to computer via SD Memory Card.

Simple Navigation with On-Screen Menus

Intuitive, easy to understand on-screen menus make operation simple. 26 available languages, 2X digital zoom quickly magnifies the subject, mirror feature corrects image inversion of the prism tip, and much more!



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SMOOTH, PRECISE, 4-WAY ARTICULATION



Using the optional Close-Focus Tip, fine cracks are detected inside a combustion chamber.

Hawkeye V2 Video Borescopes have a proprietary articulation design resulting in a smooth, tactile feel and precise orientation. Laser welded joints provide strength and durability. Aircraft and Power Generation maintenance teams can quickly and easily inspect turbine blades, combustion chambers, cooling tubes, and much more, all without the need for costly and time consuming engine and system tear-down. Foundries can inspect for flash, sand, and voids inside complex castings.

Hawkeye V2 Video Borescopes deliver the same image quality, portability, and articulation of scopes costing twice as much.

EVERYTHING YOU'LL NEED, ALL IN A STURDY, LOCKABLE, CARRYING CASE



Standard Kits Include:

- Hawkeye® V2 Video Borescope
- Monitor Battery Charger
- Monitor Spare Battery Charger
- USB Cable
- Video Cables
- V2-LED Light Source & Spare Batteries
- V2-LED Light Source Charger & Batteries
- Spare Monitor Battery
- 2 GB SD Memory Card
- Rugged Hawkeye® Carrying Case

Deluxe Kits Also Include:

- 90° Prism Tip
- Close-Focus Tip
- V2 Stand
- V2 Rigidizer



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ACCESSORIES



Close-Focus Tip

The Close-Focus Tip allows the user to view defects, such as tiny cracks, up close with high magnification. The tip threads directly onto the Hawkeye V2 Video Borescope. Double threads are utilized to prevent the tips from falling off.



90° Prism Tip

The 90° Prism Tip threads directly onto the Hawkeye V2 Video Borescope, allowing the user to view the walls of pipes and tubes and to more easily inspect certain turbine blades or engine valves in difficult engines. Double threads are utilized to prevent the tips from falling off.



V2 Rigidizer

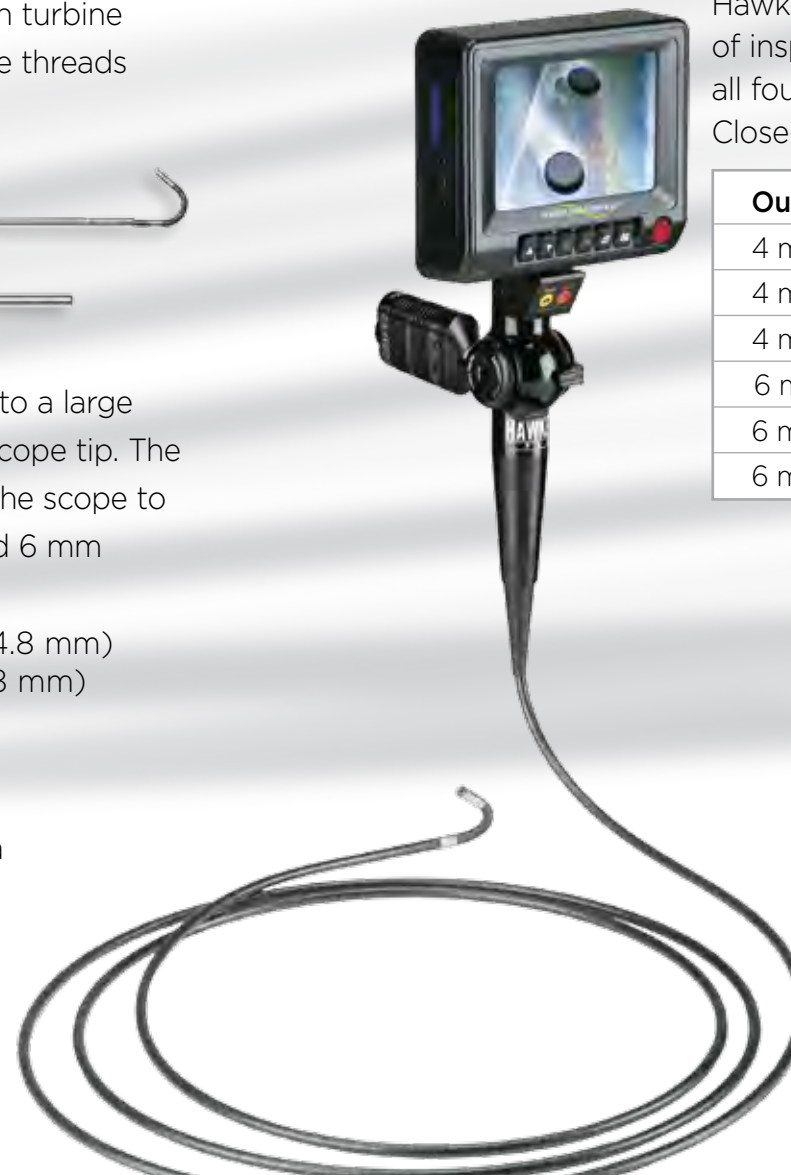
When you push a flexible scope through a hole into a large open cavity it is difficult to direct and orient the scope tip. The V2 Rigidizer tube allows the user to easily direct the scope to whatever you want to see. Available for 4 mm and 6 mm scopes.

Length: 17" **Outside Diameters:** 4 mm, 0.188" (4.8 mm)
6 mm, 0.313" (8 mm)



V2 Stand

When you're working on a benchtop location, in a repair station, factory, or foundry, the V2 Stand allows you to set the scope on the benchtop for hands free operation.



V2 VIDEOSCOPIES

Hawkeye® V2 Video Borescopes

| Outside Diam. | Length | Articulation | Sheath | Model # | Price |
|---------------|---------------|--------------|----------|---------------|----------|
| 4 mm | 1.5 m (4'11") | 2-way | Tungsten | V2 040 1500 2 | \$7,995 |
| 4 mm | 1.5 m (4'11") | 4-way | Tungsten | V2 040 1500 4 | \$8,995 |
| 4 mm | 3.0 m (9'10") | 4-way | Tungsten | V2 040 3000 4 | \$10,995 |
| 6 mm | 1.5 m (4'11") | 4-way | Tungsten | V2 060 1500 4 | \$7,995 |
| 6 mm | 3.0 m (9'10") | 4-way | Tungsten | V2 060 3000 4 | \$8,995 |
| 6 mm | 6.0 m (19'8") | 4-way | Tungsten | V2 060 6000 4 | \$12,995 |

Hawkeye® V2 Deluxe Kits

Hawkeye V2 Deluxe Kits contain everything you'll need to complete a wide range of inspections. Deluxe Kits contain all the components of the standard kit, PLUS, all four accessories shown on the opposite page: the 90° Prism Tip, the Close-Focus Tip, the Rigidizer tube, and the V2 Stand.

| Outside Diam. | Length | Articulation | Sheath | Model # | Price |
|---------------|---------------|--------------|----------|----------------|----------|
| 4 mm | 1.5 m (4'11") | 2-way | Tungsten | V2D 040 1500 2 | \$9,995 |
| 4 mm | 1.5 m (4'11") | 4-way | Tungsten | V2D 040 1500 4 | \$10,995 |
| 4 mm | 3.0 m (9'10") | 4-way | Tungsten | V2D 040 3000 4 | \$12,995 |
| 6 mm | 1.5 m (4'11") | 4-way | Tungsten | V2D 060 1500 4 | \$9,995 |
| 6 mm | 3.0 m (9'10") | 4-way | Tungsten | V2D 060 3000 4 | \$10,995 |
| 6 mm | 6.0 m (19'8") | 4-way | Tungsten | V2D 060 6000 4 | \$14,995 |

Hawkeye® V2 Video Borescope Accessories

| Item | Model # | Price |
|-----------------------|---------------|-------|
| 4 mm Close-Focus Tip | V2-TIP-4CF | \$995 |
| 6 mm Close-Focus Tip | V2-TIP-6CF | \$995 |
| 4 mm 90° Prism Tip | V2-PTIP-4-90 | \$995 |
| 6 mm 90° Prism Tip | V2-PTIP-6-90 | \$995 |
| V2 Rigidizer 4 mm | V2-RT4 | \$195 |
| V2 Rigidizer 6 mm | V2-RT6 | \$195 |
| V2 Stand | V2-Stand | \$95 |
| V2 Charger | V2 Charger | \$30 |
| Spare Battery | PVM50 BATTERY | \$50 |
| Spare Battery Charger | PVM50 Charger | \$30 |
| V2 LED Lightsource | V2-LED KIT | \$725 |
| Lightsource Batteries | PVS-LED-BAT | \$10 |



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SPECIFICATIONS

Hawkeye® V2 Video Borescope Specifications

| Part no. | V2 040 1500 4 | V2 040 3000 4 | V2 060 1500 4 | V2 060 3000 4 | V2 060 6000 4 |
|-----------------------------------|--|--------------------|--------------------|--------------------|--------------------|
| Scope diameter | 4 mm | 4 mm | 6 mm | 6 mm | 6 mm |
| Scope length | 1.5 m | 3.0 m | 1.5 m | 3.0 m | 6.0 m |
| Articulation | 4 way, +/- 150 deg | 4 way, +/- 150 deg | 4 way, +/- 150 deg | 4 way, +/- 150 deg | 4 way, +/- 120 deg |
| Direction-of-view | 0°, optional 90 | 0°, optional 90 | 0°, optional 90 | 0°, optional 90 | 0°, optional 90 |
| Field-of-view | 70° | 70° | 70° | 70° | 70° |
| Depth-of-field | 15 mm - ∞ | 15 mm - ∞ | 15 mm - ∞ | 15 mm - ∞ | 15 mm - ∞ |
| Outer sheath | Tungsten braid | Tungsten braid | Tungsten braid | Tungsten braid | Tungsten braid |
| Inner sheath construction | Stainless steel mono-coil with outer polymer layer | | | | |
| Length of rigid tip | 14 mm | 14 mm | 18.3 mm | 18.3 mm | 18.3 mm |
| Minimum bend radius | 32 mm | 32 mm | 45 mm | 45 mm | 45 mm |
| Weight of the entire system | 2 lbs. | 2.2 lbs. | 2.1 lbs. | 2.3 lbs. | 2.9 lbs. |
| Certified | CE | CE | CE | CE | CE |
| Color camera | CMoS, color signal NTSC/PAL, sensitivity 2 Lux / F 3.4 | | | | |
| Illumination | Detachable micro LED with intensity adjustment | | | | |
| Display | 5" TFT LCD, 640 x 480 resolution, 4:3 aspect ratio, rubber coating for shock absorption | | | | |
| Interface | Mini USB 1.1 and AV/out | | | | |
| Recording media | SD card up to 32 Gb | | | | |
| Image capture format (resolution) | JPEG (640 X 480) | | | | |
| Video capture format (resolution) | ASF (640 X 480) | | | | |
| Power | 5VDC | | | | |
| Display battery | 2.5 hr. run time, rechargeable lithium, 3.7 VDC, capacity 3900 mAh, charging time 3 hr. | | | | |
| Light source battery | 2 ea. Tenergy RCR123A circuit protected 3.0V rechargeable Li ion battery, average run time 75 min. | | | | |
| 90° interchangeable tips | | | | | |
| Part no. | V2-PTIP-4-90 | V2-PTIP-4-90 | V2-PTIP-6-90 | V2-PTIP-6-90 | V2-PTIP-6-90 |
| Direction-of-view | 90° | 90° | 90° | 90° | 90° |
| Field-of-view | 70° | 70° | 70° | 70° | 70° |
| Depth-of-field | 12 mm - ∞ | 12 mm - ∞ | 12 mm - ∞ | 12 mm - ∞ | 12 mm - ∞ |
| Distal tip outer diameter | 4 mm | 4 mm | 6 mm | 6 mm | 6 mm |
| 0° close-focus tips | | | | | |
| Part no. | V2-TIP-4CF | V2-TIP-4CF | V2-TIP-6CF | V2-TIP-6CF | V2-TIP-6CF |
| Direction-of-view | 0°, direct view | 0°, direct view | 0°, direct view | 0°, direct view | 0°, direct view |
| Field-of-view | 70° | 70° | 70° | 70° | 70° |
| Depth-of-field | 4 mm - 22 mm | 4 mm - 22 mm | 4 mm - 22 mm | 4 mm - 22 mm | 4 mm - 22 mm |
| Distal tip outer diameter | 4 mm | 4 mm | 6 mm | 6 mm | 6 mm |

SPECIFICATIONS

Environmental

| | |
|---|---|
| Sheath operating temperature: in air | -25° C to 80° C, in water : 10° C to 30° C |
| Storage temperature, entire unit: | -30° C to +60° C |
| Air pressure: | 1 atmosphere |
| Humidity: | 5-95% relative humidity |
| Fluid resistance of sheath | Resistant to water up to 5% salinity and most oils (except hydraulic fluid) |
| Water resistance of sheath | Waterproof |
| Borescope handle and monitor | Splash resistant only |
| Gradient Lens Corporation provides no guarantee without a specific material compatibility test. | |

V2 Video Borescope - Firmware Interface

| | |
|--|---|
| Quick access interface | Intuitive image capture and video capture function |
| Digital zoom | up to 2x |
| Image rotation | yes |
| Mirrored image | yes |
| Time/date | yes |
| Data export | yes, via USB or SD card |
| Auto-off option | optional |
| External on-screen display | yes |
| Text annotation | yes |
| Menu language selection | English, German, French, Spanish, Italian, Japanese, Russian, Portuguese, Dutch, Chinese, Polish, Czech, Croatian, Greek, Danish, Swedish, Finnish, Arabic, Korean, Hindi, etc. |
| Memory device | SD memory card, 32 mm Ø 24 mm Ø 2.1 mm, pins: 9, ≤4 Gb, up to 32 Gb |
| Image capture format (resolution) | JPEG (640 X 480) |
| Video capture format (resolution) | ASF (640 X 480) |
| Playback of captured videos and images | Playback supported on Windows Media Player |
| Input/output connections | Memory interface: 1X SD, USB interface: 1X mini-USB 1.1./USB, image signal output: 1x AV, mains power supply: 1X 5 V DC |



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