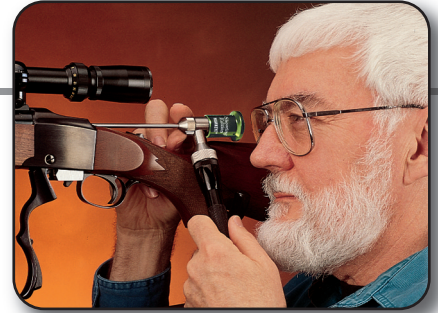


BORESCOPIES: THEIR EVOLUTION AND APPLICATION IN FIREARMS.



A borescope is an optical device that is used to see inside of objects that would otherwise be inaccessible for viewing. Borescopes were first developed to look inside of a cannon.

Another version, known as an endoscope, was used to examine cadavers. Refined many times over the years, endoscopes have resulted in the wonders of “minimally invasive surgery.”

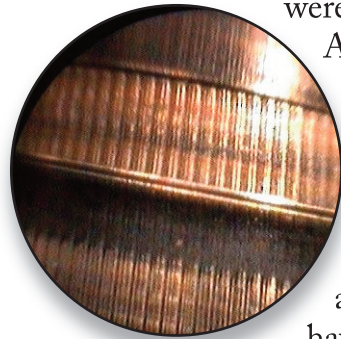
Borescopes are not autoclavable, so they can not be used in medical applications for humans. Borescopes are dramatically less expensive than endoscopes, so they have gained wide acceptance in aerospace, automotive, metal working, firearms, and manufacturing applications.

Designed specifically for use in firearms, the Hawkeye® Borescope has become the standard of the industry among gunsmiths, benchrest shooters, varmint hunters, firearms manufacturers, and forensic scientists.

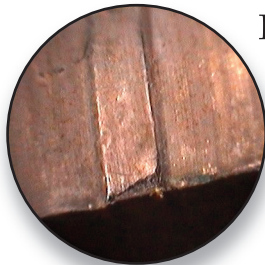
Shooters use it to search for tool marks, defects in chambers and rifling, erosion, and fouling that seriously affect accuracy. Gunsmiths use it to diagnose problems, to monitor processes such as chambering and lapping, and to justify their services. Manufacturers depend on the Hawkeye for research and development when they need to inspect the quality of incoming barrels and in quality assurance on the shop floor.

Buyers and sellers of used firearms examine bores to make certain that there are no “surprises lurking in the barrel.” Forensic Scientists (the real CSI guys), use it to determine twist and land count, to examine sound suppressors, and to preserve valuable DNA evidence that can link a firearm to a crime.

The Hawkeye offers two viewing angles. The zero-degree direction-of-view provides an impressive view of twist and forewarns shooters of pending shell separation in well used brass.



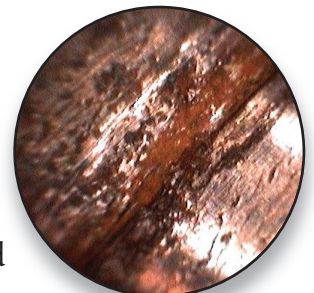
Toolmarks



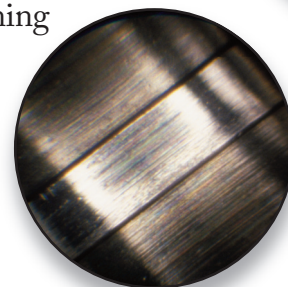
Damaged crown



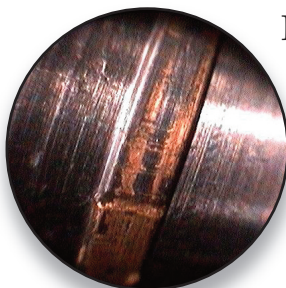
Never cleaned?



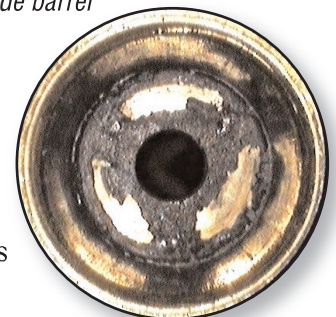
Rust



Match grade barrel



Copper, carbon and toolmarks

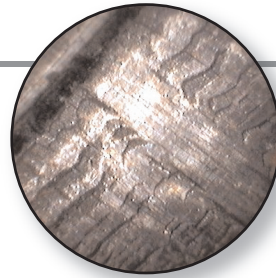


Cartridge case

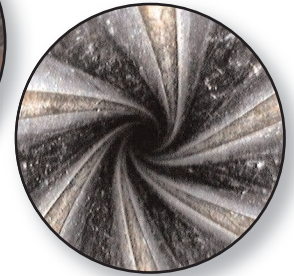
(Continued on reverse)

BORESCOPIES: THEIR EVOLUTION AND APPLICATION IN FIREARMS.

The ninety-degree direction-of-view allows the viewer to inspect the chamber, leade, and bore of a firearm from muzzle to breach. The key applications for a shooter are to monitor erosion and to ensure that their cleaning regimen is working. Usually it isn't!



Erosion of the leade at 90° DOV

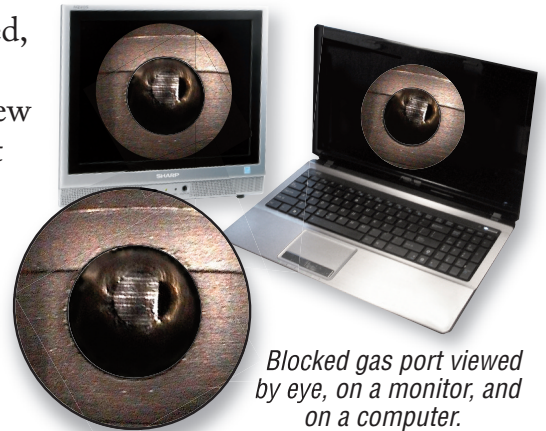


Land count, direction and fouling at 0° DOV

Video cameras available from Gradient Lens Corporation make it possible to view an image in color on a monitor. Alternatively, the signal from the borescope and video camera can be captured, stored, and transmitted with a computer. Picture this... a gunsmith in Iowa receives a rifle from his customer in New Jersey. Upon inspecting it with his borescope it is clear that the guy in New Jersey needs a new barrel. The gunsmith's recommendation to the customer by phone fell upon deaf ears. But when he sent a video of the toolmarks, erosion, and fouling in the customer's barrel on the internet, he got the order!



Unknown condition



Blocked gas port viewed by eye, on a monitor, and on a computer.

Occasionally, people think that it would be smart to buy a flexible borescope to inspect their firearms. Not a good idea. Flexible borescopes utilize fiber optic strands to transmit light and images and are incapable of producing images of equal quality to solid optical glass. Further, an industrial quality flexible borescope costs far more than a rigid scope. Inexpensive flexible scopes are generally not repairable. The bill for those that are can reach thousands of dollars. So a rigid borescope is actually less expensive, better suited, and more flexible in a shooting application than a flexible borescope.



Green eyecup

The "Shooting Edition" of the Hawkeye Borescope is sold exclusively to the shooting market and can be recognized by a green eyecup. This version features upgraded optics and a new mirror technology that protects the mirror from the harsh chemicals we routinely shove down the barrel of our firearms. Hawkeye users experience "360° inspection of lands and grooves with the clarity of a medical endoscope."

*Ken Harrington
Gradient Lens Corporation*