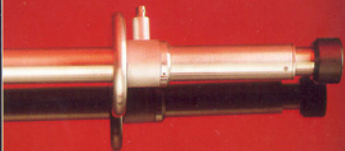
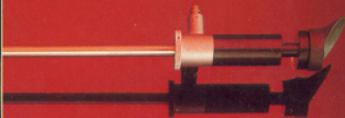


**LENOX INSTRUMENT COMPANY**

**BORESCOPE TECHNOLOGY**

*First quality borescopes, fiberscopes and  
specialized visual inspection equipment ...  
for internal viewing of inaccessible areas*



# LENOX INSTRUMENT COMPANY

## CONTINUING A 75-YEAR TRADITION OF INNOVATION IN BORESCOPE VISUAL INSPECTION TECHNOLOGY

**N**early a century ago, Lenox's founder, Dr. George Crampton, created the first industrial borescope to inspect the inside of a steam turbine. Dr. Crampton's work was continued during World War II, when Lenox designed and built custom borescopes to help scientists complete work on the Manhattan Project.

Over the course of our history, we have earned a reputation for innovation in the development of borescope technology that meets the most demanding requirements ... and for our ability to provide the highest quality optical images that technology will allow.

Our pursuit of excellence continues today ... with a corporate philosophy that emphasizes simplicity of design and an uncompromising approach to quality.

To ensure the clearest, brightest borescope images, Lenox employs sophisticated CAD/CAM systems and draws upon years of experience in lens manufacturing and related optical technologies.

When you specify a Lenox borescope, you are assured of the highest quality optics, the sharpest, brightest image and the most practical and appropriate scope for your particular need-- no matter how difficult or unusual the application.

In fact, many of today's Lenox products were originally created on a custom basis to satisfy a customer demand that could be met no other way. Many of these custom borescopes have become standards throughout and across industries. Our widely-used Chamberscope, for example, is still the only device of its kind in the world.

For literally hundreds of visual inspection problems, a Lenox borescope is the best and most cost-effective solution.

Lenox borescopes and fiberscopes are as easy to use as a pair of binoculars and provide the finest image quality available anywhere.

Whether you need to inspect hard-to-reach locations in power station rotors ... automobile engines ... aircraft jet turbines or reciprocating engines ... construction equipment ... nuclear reactors

... oil refineries ... tubing or heat exchangers of pharmaceutical and chemical plants ... hydraulic cylinders of giant cranes ... or a wide range of other equipment ... you'll do a better job with a Lenox borescope.

### WITH LENOX BORESCOPES: YOU'LL VIEW THE INACCESSIBLE WITH CRYSTAL CLARITY

Lenox borescopes are high quality optical tools designed to penetrate places where your eye can't go. They are self-illuminating ... and deliver a brightly lit, magnified image of the inspected area to the eyepiece.

You can't get a clearer, brighter image than what you'll see through a Lenox borescope. Using U.S. Bureau of Standards resolution targets, we've proven that Lenox borescopes provide exceptional image resolution.

### YOU'LL SPEED PREVENTIVE INSPECTIONS

Even the toughest inspections will be done quickly. And there's no interpretation needed. So, labor is reduced and equipment downtime is cut.

### YOU'LL IMPROVE PREVENTIVE MAINTENANCE

You'll do closeup interior inspections without equipment tear-

down. Estimate needed repairs. And identify potential problems before they become major headaches.

### YOU'LL CUT MANUFACTURING RE-WORK

By examining new equipment interiors for signs of damage before installing them, you'll cut re-work frequency. Maintain quality control levels. And improve vendor responsiveness.

### YOU'LL INCREASE SAFETY

With borescope inspections you'll ensure proper operation of relief valves, rupture discs, piping, boiler flames, etc. Find corrosion, cracks, blockages, materials buildup and coatings early -- before they cause serious damage. And view hazardous operations from a safe distance.

### LENOX CUSTOMERS ARE FOUND ACROSS THE FULL SPECTRUM OF INDUSTRIES

- Chemical
- Aviation
- Steel and metals
- Pulp and paper
- Power
- Welding
- Aerospace
- Glass
- Automotive
- Civil engineering
- Shipbuilding
- Food processing
- Mechanical engineering
- Nuclear
- Pipeline
- Construction equipment
- Foundry



## LENOX RIGID BORESCOPIES



**BETTER PERFORMANCE  
VALUE WHERE IT COUNTS  
MOST...THE SHARPEST,  
CLEAREST IMAGE MONEY  
CAN BUY**



**A** clear, bright image is the most important performance feature of any visual inspection tool. That's why we design and manufacture every Lenox rigid borescope with one goal in mind -- to deliver the highest possible image quality at the lowest cost.

To achieve this, we employ computer-designed optics, stainless steel or aluminum construction, sophisticated lens grinding techniques and non-reflective coatings throughout the optical path.

The result is what we believe to be the best borescope value in the industry ... a value that can be 30% to 40% greater than some competitive borescopes.

### **LENOX BORESCOPIES GET TOP SCORES IN U.S. BUREAU OF STANDARDS RESOLUTION TESTS AND LIGHT OUTPUT TESTS**

The optical systems in our borescopes are designed to produce an abundance of near-100%-white light and the highest possible resolution.

The result is a borescope that allows you to view objects more clearly, with excellent color fidelity ... at greater distances inside dark cavities. And, we've proven it by achieving the highest possible resolution scores in tests, using U.S. Bureau of Standards resolution targets.

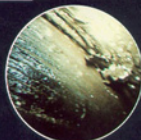
Our light output is equally impressive. In tests using sensitive light meters, Lenox borescopes consistently produce some of the highest intensity levels available in a rigid borescope.

### **WHEN YOU'RE READY TO COMPARE, LENOX RIGID BORESCOPIES ARE READY TO PROVE THEIR HIGHER PERFORMANCE VALUE**

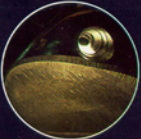
- Clearest, brightest magnified images available.
  - U.S. Bureau of Standards proven performance value and quality.
  - Choose from over 650 diameter and depth options -- diameters from .039" to .75", lengths from 3" to 12'.
  - Choose from a variety of viewing heads, magnifications, and fields of view.
  - Numerous specialized options available, including UV light, explosion-proof light sources, heat-resistance, etc.
  - Best value on a performance-vs-cost evaluation
  - Camera and TV adaptable
- ### **QUICK SPECS ON LENOX RIGID BORESCOPIES**
- **Diameters:** as small as 1mm
  - **Lengths:** from 3" to 12'
  - **Viewing:** direct, forwards oblique to the side or retrospective
  - **Resolution:** identify flaws as small as .0005"
  - **Models:** 650 different versions



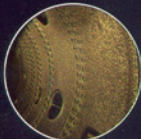
*Actual photo taken through Lenox rigid borescope shows missing rivet on structural component.*



*Corrosion at weld inside stainless steel pipe as seen through Lenox borescope.*



*Magnified image of compression chamber inside large diesel engine shows carbon build-up on valves.*



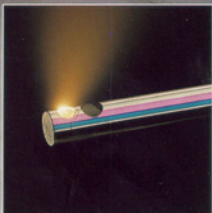
*Turbine combustion chamber as seen through Lenox rigid borescope.*



A complete selection of light sources, accessories, camera and CCTV adapters, viewing heads, and monitoring equipment is available for all Lenox rigid borescopes.



This U.S. Bureau of Standards target photo clearly demonstrates Lenox borescope image quality and resolution.



Each end tip features a protected viewing head with an extremely bright quartz halogen lamp positioned for maximum site illumination.



**YOU CAN ORDER BY PHONE OR FAX!**

Need Help? Call for technical assistance, ordering information, or to find the nearest Lenox representative

**1-800-356-1104**

**FAX: 215-322-6126**

## LENOX FLEXIBLE BORESCOPIES

**CLEAR, COMPLETELY DISTORTION-FREE IMAGES...NO MATTER HOW DISTORTED THE TRAVEL PATH**



**S**ome of the world's toughest inspection problems ... in some of the most inaccessible and inhospitable spots ... have been solved by Lenox flexible borescopes.

Over the years, we've developed and refined the flexible borescope ... and today, brought it to the limits of optical technology.

For example, we've developed a technique to ensure a highly uniform fiber configuration through the length of the probe, to produce the best possible image resolution and virtually zero distortion. We've also placed the objective lens at the distal tip for problem-free focusing.

For efficient viewing inside even the most complex assemblies, Lenox flexible borescopes feature a totally steerable, 4-way articulated tip that allows you to easily manipulate the borescope past blockages ... while ensuring bright, clear viewing of the full range of views inside the inspected piece.

What's more, the optical bundles in every Lenox flexible scope are protected by completely enclosing them in a housing of flexible, stainless steel. This lets you safely maneuver around the

sharpest corners and elbows, without sacrificing either the brightness or sharpness of the image through the eyepiece.

When there's no straight path to the area you're trying to inspect ... make the choice that hundreds of Lenox customers have made. Like them, you'll find that nothing offers you better images and more performance value than a Lenox flexible borescope.

### COMPARE ... AND YOU'LL SEE THAT LENOX FLEXIBLE BORESCOPIES ARE THE BEST VALUE

- State-of-the-art fiberoptics
- Delivers bright self-illuminated images
- Exceptional fiber optic bundle coherence for maximum image resolution
- Rugged stainless steel probe sheathing
- Remote steering control with 4-way articulated tip
- Furnished with light source and case at no added cost
- Camera and TV adaptable

### QUICK SPECS ON LENOX FLEXIBLE BORESCOPIES

- **Diameters:** fit into openings as small as .200"
- **Lengths:** from 27" to 96"
- **Viewing:** direct or right angle viewing, with remote controlled steerable four-way articulation
- **Resolution:** identify flaws as small as .001"



Photograph of closed, seated valve after cleaning.



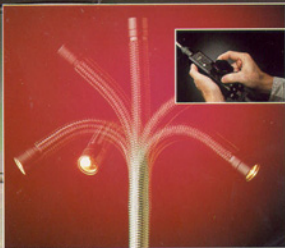
Coolant holes on turbine blade as seen through Lenox flexible borescope.



Diesel injector nozzle as seen through Lenox flexible borescope.



Lenox flexible borescope shows friction weld in oil well drill pipe.



All Lenex flexible borescopes include this heavy duty carrying case AT NO ADDED COST.  
 Competitive flexible borescopes -- comparable in performance -- can cost you up to 40% more for the same scope.



**YOU CAN ORDER BY PHONE OR FAX!**

Need Help? Call for technical assistance, ordering information, or to find the nearest Lenex representative

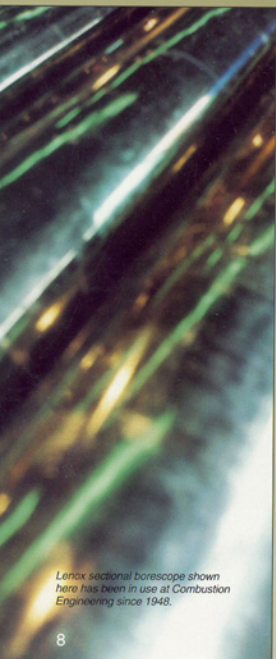
**1-800-356-1104**

**FAX: 215-322-6126**

# LENOX SECTIONAL RIGID BORESCOPIES



**FOR CRYSTAL CLEAR IMAGES...PLUS LENGTH ADAPTABILITY OF 3 FEET TO 150 FEET**



Lenox sectional borescope shown here has been in use at Combustion Engineering since 1948.

**N**o other rigid borescope delivers such exceptional image resolution... with this much length adaptability.

Originally developed in 1920 to inspect huge steam turbines, the Lenox sectional borescope was adopted by the U.S. Army during World War II. Today, it is an industry standard for applications where uncompromising image quality... and user control over length... are critical.

This unique inspection tool is furnished as a basic 3 foot borescope with a threaded probe. By adding optional 3-foot screw-on extender sections, you can increase the working length to meet almost any requirement.

Lenox sectionals feature computer-designed optics and stainless steel or light weight aluminum alloy construction. They are available in a broad range of standard and custom diameters.

Every sectional comes complete with probe body and eyepiece, a viewing head, variable transformer, spare incandescent light source and a fitted protective case. For even greater performance range, you can choose from

five different optional, interchangeable viewing heads.

And no matter how long your sectional scope gets, there's one thing that never changes -- image quality. Whether it's 3 feet long or extended up to 150 feet... no other sectional borescope delivers a sharper, higher resolution image.

## **DOLLAR FOR DOLLAR, NO OTHER SECTIONAL BORESCOPE GIVES YOU MORE PERFORMANCE, MORE VALUE**

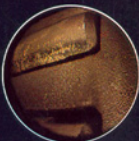
- Computer-designed optics
- Precision-ground lenses
- Highest resolution images technology will allow
- Total adaptability from 3 feet to 150 feet by adding extender sections as required
- Stainless steel or aluminum alloy construction
- Five different viewing angles available
- Complete with heavy duty case, viewing head and light source
- Camera and TV adaptable

## **QUICK SPECS ON LENOX SECTIONAL BORESCOPIES**

- **Diameters :** fit into openings as small as 3/8"
- **Lengths:** from 2' to 150'
- **Viewing:** direct, right angle, retro-grade, forward oblique and circumferential
- **Resolution:** identify flaws as small as .0005"



Actual photo taken through Lenox sectional borescope showing corrosion deep inside long section of pipe



Train wheel bearing seen through Lenox sectional borescope.

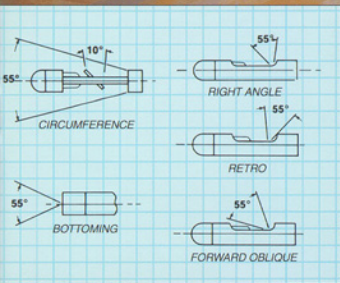


1952 U.S. Air Force resolution target.



High-radioactivity equipment inside nuclear reactor as seen through Lenox sectional borescope with radiation-resistant lenses.





Each end tip features a protected viewing head with an extremely bright quartz halogen lamp positioned for maximum site illumination.



**YOU CAN ORDER BY PHONE OR FAX!**

Need Help? Call for technical assistance, ordering information, or to find the nearest Lenox representative

**1-800-356-1104**

**FAX: 215-322-6126**

## LENOX IMAGE DISPLAY & RECORDING SYSTEMS

**NOW YOU CAN RECORD AND SHARE THE IMAGE YOU SEE IN ANY LENOX BORESCOPE...OR REMOTELY VIEW IMAGES...SIMPLY BY ADDING ANY 35MM OR VIDEO CAMERA, VCR, OR MONITOR**

**N**ow you can record and share the image you see in any Lenox borescope ... or view images remotely ... simply by adding any 35mm or video camera, VCR, or monitor.

Start with a simple adapter that connects any Lenox borescope to any image display system you choose. Attach a still camera to preserve crisp, clear, detailed borescope images on top-quality 35mm film. You'll have the highest-resolution images possible -- frozen on easily viewed slides or captured for enlargement as detailed color prints. Inexpensively.

Or hook up a video camera and monitor for "arm's length" viewing comfort and safety. Add a VCR for continuous, accurate recording.

### **YOU CAN EXPAND YOUR DISPLAY AND RECORDING SYSTEM WITH DIGITIZERS, EDITORS, SPECIAL LENSES**

Starting with Lenox gives you a streamlined configuration that you can control ... a modular structure that doesn't limit your system design.

And you can return to routine visual inspection in a matter of minutes, at any time. The simple quick-disconnect feature makes system hookups and teardowns a snap.

You can assemble the system you need by yourself -- using

a Lenox borescope, one of our adapters, and the cameras and recorders of your choice. Or we'll provide a complete system for you ... one that will provide precisely the kind of display and documentation you require.

We're ready to help you. When you need the highest quality images AND the most flexibility in recording and display, look to Lenox.

### **YOUR LENOX BORESCOPE BRINGS THE HIGHEST QUALITY IMAGE TO YOUR EYE ... WHY STOP THERE?**

Today you can capture critical inspection images on film or magnetic tape ...

- for a "hard copy" of images showing measurement scale
- to document your inspections
- for consultations off-site
- to integrate inspection results into your SPC

### **THE VIDEO MONITOR DISPLAYS IMAGES...**

- at locations safely remote from a hazardous site
- for convenient viewing by groups
- to reduce tension and fatigue during repetitive inspection tasks

### **QUICK SPECS ON LENOX IMAGE DISPLAY AND RECORDING SYSTEMS**

- Extend the uses of any Lenox borescope
- Adapters for 35mm camera or video camera
- Modular system expands to include VCR, other accessories





**SOLVE YOUR TOUGHEST VISUAL INSPECTION PROBLEMS WITH THESE LENOX SPECIALIZED BORESCOPIES**



**CHAMBERSCOPE**

for viewing engines and large chambers



**HIGH TEMPERATURE BORESCOPE**

for remote viewing of boilers and high temperature processes



**AUTOSCOPE**

low cost visual inspection tool with high resolution imaging for automotive use



**ULTRAVIOLET BORESCOPE**

black light borescope that combines high resolution and high output ultraviolet light

**YOU CAN ORDER BY PHONE OR FAX!**

*Need Help? Call for technical assistance, ordering information, or to find the nearest Lenox representative*

**1-800-356-1104**

**FAX: 215-322-6126**

**LEADING COMPANIES WORLDWIDE HAVE DISCOVERED  
THAT LENOX DELIVERS THE BEST BORESCOPE VALUE.  
HERE'S JUST A PARTIAL LIST OF OUR CUSTOMERS**

ACIERS INOXIDABLES ATLAS  
AERO SUPPORT INTERNATIONAL  
AES SYSTEMS, INC.  
AGILE TECHNOLOGIES RESOURCES  
AIRGROUND EQUIP SALES, INC.  
ALL SYSTEM AEROSPACE INT'L  
ALLISON GAS TURBINES  
AMERICAN EXPORT SERVICES  
AMERICAN REF-FUEL COMPANY  
ANR PIPELINE CO.  
APPALACHIAN POWER CO  
ARGONNE NATIONAL LABORATORIES  
ARKANSAS WESTERN GAS CO.  
ATLANTIC RESEARCH CORPORATION  
AJUST ARACE & SONS, INC.  
AVT  
AVTEC, INC.  
BANNER AIRCRAFT INT'L, INC.  
BENEFICIAL MANAGEMENT, INC.  
BETA MACHINERY ANALYSIS LTD.  
BRAZILIAN AERONAUTICAL COMM.  
BURGLAR ALARM & SECURITY CO.  
CAPITAL WESTWARD SYSTEMS  
CARDINAL OPERATING COMPANY  
CATERPILLAR, INC.  
CITY PUBLIC SERVICE  
CITY WATER, LIGHT & POWER CO.  
CMR SYSTEMS, LTD.  
COGENERATION MANAGEMENT CO.  
COLUMBIA GAS TRANS. CORP.  
COMBUSTION COMPONENTS ASSOC.  
COMMONWEALTH EDISON COMPANY  
CONNECTICUT LIGHT & POWER CO.  
CONSOLIDATED EDISON  
CONSUMERS POWER COMPANY  
COORS BREWING COMPANY  
COPELAND CORPORATION  
CORNING GLASS WORKS  
CORPORATE WINGS, INC.  
CORVITA CORPORATION  
CUZ CONSORTIUM  
DAVID TAYLOR RESEARCH CENTER  
DELTA AIR LINES  
DEPARTMENT OF ATOMIC ENERGY  
DERCO INDUSTRIES, INC.  
DIAMOND ELECTRONICS  
DOUGLASTECH IMPORTACAO E  
DOWELL-SCHLUMBERGER  
DUKE POWER CO.  
DYN-CORP

E. I. DUPONT DE NEMOURS & CO.  
EAST OHIO GAS COMPANY  
EASTERN NDT, INC.  
EDWARDS ENGINEERING  
EER CORPORATION  
EGAT  
ELECTRIC POWER TECHNOLOGY  
ENGINEERING EQUIPMENT EST.  
ENRON GAS PIPELINE OPERATING  
FLORIDA POWER & LIGHT CO.  
FOSTER WHEELER ENERGY CORP  
G&S SUPPLY, INC.  
GENERAL DYNAMICS CORPORATION  
GENERAL ELECTRIC CO.  
GENERAL PRODUCTS  
GEORGE KELK, LTD.  
GEORGE MARTIN COMPANY  
GENERAL MOTORS DE MEXICO  
GRANITE CITY STEEL  
GRIFFITH OIL TOOL  
GRINELL CORPORATION  
HAYNES INTERNATIONAL  
HCP INDUSTRIAL SALES  
HOECHST CELANESE  
IMPERIAL OIL, PRODUCTS DIV.  
INTEK  
INTERNATIONAL OILFIELD SERVICE  
ITT TEVES  
JOHN M. PULTZ COMPANY, INC.  
KENTUCKY POWER COMPANY  
KHIC AMERICA CORPORATION  
LA COUNTY SANITATION DISTRICT  
LA FARGE CORPORATION  
LOCKHEED  
LONG ISLAND LIGHTING COMPANY  
MCDONNELL DOUGLAS CORP.  
MILLER BREWING COMPANY  
MISSOURI BASIN POWER PROJECT  
MY INTERNATIONAL  
MCMASTER CARR SUPPLY COMPANY  
N TECH TECHNOLOGIES LTD.  
NASA LANGLEY RESEARCH CENTER  
NASA/OFFICE OF THE COMPTROLLER  
NATIONAL AIRMOTIVE  
NAVAL AVIATION DEPOT  
NAVSSSES  
NEW BRUNSWICK SCIENTIFIC CO  
NEWPORT NEWS SHIPBUILDING  
NORTH AMERICAN REFRACTORIES  
NORTHERN NATURAL GAS

NUCOR STEEL  
OCCIDENTAL CHEMICAL  
OHIO POWER CO.  
P S E & G  
PARKER HANNIFIN CORPORATION  
PEPCO  
PETERSON BUILDERS, INC.  
PHILADELPHIA ELECTRIC COMPANY  
PORTSMOUTH NAVAL SHIPYARD  
PRECISION COMPONENTS CORP.  
QUALITY MEASUREMENT CENTER  
R. J. REYNOLDS TOBACCO CO.  
RELI TECHNOLOGY, INC.  
ROUGE STEEL CO.  
SARGENT CONTROLS AEROSPACE  
SCOT FORGE  
SCOT INDUSTRIES  
SEACOR  
SIKORSKY AIRCRAFT DIVISION  
SOUTHERN CALIFORNIA EDISON  
SOUTHERN CO. SERVICES, INC.  
SSI SERVICES, INC.  
STANLEY HYDRAULIC TOOLS  
SYSTEMS CONTROL  
TECHNOLOGY, INC.  
TELEDYNE METAL FORMING  
TENNESSEE VALLEY AUTHORITY  
TILDEN MAGNETITE PARTNERSHIP  
TMC  
TOYOTA MOTOR DISTRIBUTORS, INC.  
TRIDENT REFT FACILITY  
TROBAGO INDUSTRIES, INC.  
U.S. AIR FORCE  
U.S. ARMY  
U.S. COAST GUARD  
U.S. FISH & WILDLIFE SERVICE  
U.S. MARINE CORPS  
U.S. NAVY  
U.S.X.  
UNION CAMP CORP  
UNION PACIFIC  
VIRGIN ISLANDS WATER & POWER  
VOLKSWAGEN OF AMERICA  
WELFO INDUSTRIES, LTD.  
WESTINGHOUSE ELECTRIC CORP.  
WEYERHAEUSER PAPER COMPANY  
WILLRICH PRECISION INSTRUMENT

**PROVE LENOX  
VALUE TO  
YOURSELF WITH A  
NO-OBLIGATION  
TEST COMPARISON  
OF ANY LENOX  
PRODUCT**



Lenox Instrument Co.  
265 Andrews Road  
Scottsville Industrial Park  
Trevose, PA 19053-3427  
1-800-356-1104  
215-322-9990  
FAX: 215-322-6126