

OPERATION MANUAL

MODEL 177704

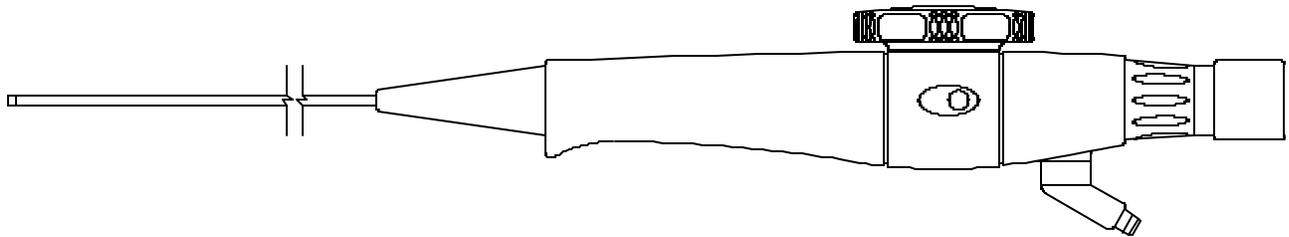
MODEL 177705

MODEL 177706

MODEL 177708

MODEL 177712

NON-CONDUCTIVE ARTICULATING FIBERSCOPE



ITI | INSTRUMENT
TECHNOLOGY, INC.

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INTRODUCTION

Thank you for selecting Instrument Technology, Inc. (ITI) to fulfill your remote viewing needs.

Since 1967, ITI has been the Leader in Remote Viewing. The only company of its type doing all its manufacturing in the United States, ITI consistently provides cutting edge technology to customers world-wide.

ITI specializes in the design, development and manufacture of Remote Viewing Instruments (RVI) and systems including Borescopes, Fiberscopes and Videoscopes.

ITI offers over 2,000 standard products as well as products custom designed for unique applications. No matter which ITI product is used, our customers find they are able to observe hostile and difficult to reach environments never dreamed possible before. Though ITI products can solve many remote viewing problems, it is always best to select the proper instrument for any given application. Only then can success be assured.

Your satisfaction is guaranteed with all products purchased from Instrument Technology, Inc. Feel free to contact ITI or your local ITI Representative with any questions.

WARRANTY

Instrument Technology, Inc. warrants that the equipment is fit for the purposes described herein for a period of one year after the date of shipment when used in accordance with the directions for use, and agrees to repair or replace any such defective component part at no cost to the customer.

There are no other express or implied warranties. ITI's sole obligation and purchaser's exclusive remedy for breach of any warranty shall be limited to repair or replacement of the product at the option of ITI. This warranty does not cover, and ITI will not be liable for any resulting direct, proximate, incidental or consequential damages. This warranty does not apply if the product has been subject to misuse, negligence, accident or improper application, nor shall ITI be responsible for work done or repairs made by others.

PRODUCT SPECIFICATIONS

NONCONDUCTIVE ARTICULATING FIBERSCOPES

FEATURE	<u>177704</u>	<u>177705</u>	<u>177706</u>	<u>177708</u>	<u>177712</u>
Probe Diameter	4mm (0.16")	5mm (0.20")	6mm (0.25")	8mm (0.33")	12mm (0.47")
Working Lengths	0.4M (16")	0.5M (19")	0.5M (19")	0.5M (19")	0.5M (10")
	1M (39")	1M (39")	1M (39")	1M (39")	1M (39")
	1.5M (59")	1.5M (59")	1.5M (59")	1.5M (59")	1.5M (59")
	2M (79 ")	2M (79 ")	2M (79 ")	2M (79 ")	2M (79 ") 3M (118")
Line of Sight	Forward (0°)	Forward (0°)	Forward (0°)	Forward (0°)	Forward (0°)
Field of View	40°	60°	60° or 100°	60° or 100°	60° or 100°
Angle of Articulation	± 130° U/D	± 130° U/D ± 130° L/R			

Kit includes:

*Series 17770X Non-Con Articulating Fiberscope
Model 125060 24W AC/DC Light Source
w/ AC Power Supply & DC Battery, 115VAC Charger
Model 126500 Eyeguard
P/N 408-078 Spare Lamp*

OPERATING INSTRUCTIONS

OVERVIEW OF APPLICATION

Nonconductive Fiberscopes for Bomb Inspection and Contraband Search. Designed with nonconductive probe jackets specifically to promote safety in EOD investigations, these tiny flexible scopes deliver clear, bright images from spaces nothing else could reach.

OPTIONAL LIGHT SOURCE EQUIPMENT

For all applications, ITI offers a full range of Light Source equipment:

ITI Model No	Description
125010	Standard 150W Light Source
125500/6	Fiber Light Guide, 6 Ft
125510/6	Liquid Light Guide, 6 Ft

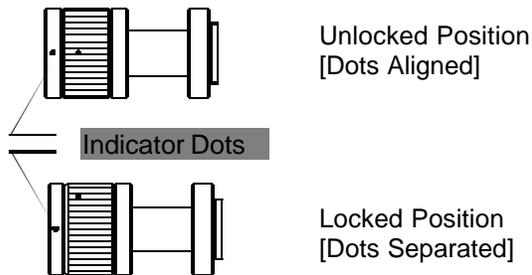
ATTACHING EYEPIECE ADAPTERS

Adapters will create a positive lock to the Fiberscope eyepiece. After being properly installed, Adapters will not allow the Fiberscope to separate from the Adapter.

To install on Fiberscope, align the indicator dots on the Adapter. Insert Fiberscope eyepiece into Adapter so that the Fiberscope eyepiece “snaps” into Adapter chuck. Rotate knurled locking ring on the Adapter so that the indicator dots are separated.

To remove Adapter, rotate knurled locking ring to realign the indicator dots. Grasp the Fiberscope by the body and remove from Adapter.

NOTE: This will require a moderate extraction force.



INSERT FIBERSCOPE

Set Articulation Knobs to neutral position, (NO articulation). Carefully guide Fiberscope through suitable opening into cavity to be inspected. Take extreme caution not to force Fiberscope. Should you encounter resistance, remove Fiberscope and review your inspection procedure.

FOCUS FIBERSCOPE

Adjust focus of Fiberscope to obtain sharpest image of fiber pattern by rotating Eyepiece Focus Ring. Start with the Fiberscope out of focus. Rotate ring so that focus is achieved and continue past clear focus. Rotate ring in opposite direction to re-establish clear focus. To obtain better object focus, move Fiberscope tip closer to or retracted further from the object being viewed.

ARTICULATION

Fiberscopes with articulation have Articulation Knob(s), located on the side of the body. Rotation of the outer knob in either direction will articulate the Fiberscope tip as much as $\pm 120^\circ$ in one axis (Up/Down). If supplied, the Fiberscope will have a second knob for articulation in a second axis (Left/Right).

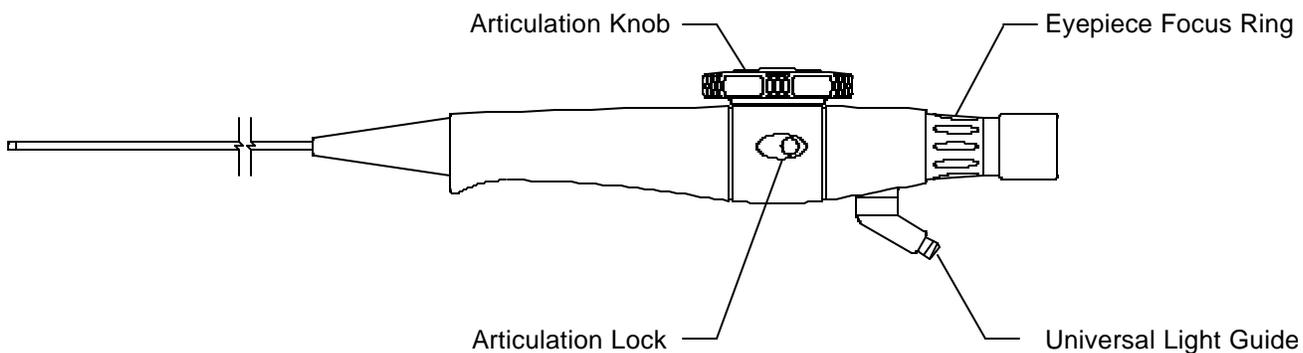
NOTE: ITI Fiberscopes have a proprietary articulation design that will not allow an operator to over-articulate the tip. This fail safe design will reduce the chances of damage to the Fiberscope.

ARTICULATION LOCKS

Fiberscopes with articulation also have Articulation Locks. After rotating the Articulation Knob to obtain the desired line of sight, the tip can be “locked” in place by engaging the Articulation Lock, located to the side of the Articulation Knob.

The Articulation Lock engages a ratchet which holds the tip in place but still allows the operator to articulate the scope. A clicking sound during articulation indicates that the lock is engaged. The locks are color coded to the knobs.

CAUTION: Always disengage Articulation Lock and straighten the Fiberscope tip before attempting to withdraw the scope from service. Failure to do so may cause scope damage.



INSTRUMENT CARE

CLEANING AFTER USE

Wipe instrument after use with a soft, clean cloth. If instrument is soiled, use a non-abrasive, neutral detergent on a damp cloth to clean it. Always store the instrument in a protective case.

NOTE: DO NOT IMMERSE INSTRUMENT IN LIQUID.

CLEANING OF OPTICS

Should cleaning of external surfaces be necessary, blow off dust with a triple-filtered, high pressure optical quality dusting spray. Wipe surface with a clean cotton swab moistened with laboratory grade alcohol. Excess alcohol can be blown away with the spray.

ITI Model 126110 RVI Cleaning Kit may be used.

PRECAUTIONS

- Do not use beyond recommended temperatures:
Maximum 150° F (65° C)
Minimum 32° F (0° C)
- Handle Fiberscope with care. Do not apply excess force while inserted. A sudden shock or fall is likely to damage your Fiberscope.
- The outer jacket of the Fiberscope should never become pinched or kinked. Doing so may damage its internal fiber optics.
- Avoid exposing Fiberscope probe to sharp edges that may cut or abraid plastic jacket.
- Outer jacket may be exposed to water, grease or light machine oil. Consult ITI for exposure to other liquids.

All fiberscopes have limitations on how tight a bend they can be subjected to without damage. Forcing a fiberscope to bend tighter than the recommended minimum bending radius will cause breakage of image fibers. Broken fibers are identified as black spots within the image fiber pattern. A large number of broken fibers will limit the resolution of fiberscope. Fiberscopes with numerous broken fibers should be returned for repair.

Minimum bend radius for ITI Flexible Fiberscopes is 1.5”.

TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE PROBLEM	REMEDY
Dark Image 	Low Light Source [LS] intensity setting	Increase LS intensity
	Object distance too far or object is extremely dark	Use higher intensity LS
	Dirt on external optical surfaces	Clean optics
	Damaged Light Guide - noticeable damage to LG jacket	Return to ITI for repair
Broken Fibers 	Dirt on external optical surfaces	Clean optics
	Dirt on internal optical surfaces	Return to ITI for repair
	Damage to probe, bending scope tighter than min bend radius	Return to ITI for repair
Image Not Clear 	Dirt on external optical surfaces	Clean optics
	Scope not focused	Focus scope
	Removable Head not on correctly	Remove Head and reinstall
	Object distance is out of scope's range	Move scope to proper object distance
	Dirt or liquid on internal optical surfaces	Return to ITI for repair
No Image 	No or low LS intensity	Check LS
	Dirt on external optical surfaces	Clean optics
	Removable Head not on correctly	Remove Head and reinstall
	Scope is damaged	Return to ITI for repair

REPAIR POLICY

If your equipment requires factory attention, contact ITI's Customer Service Dept. at (413) 562-3606 for a Return Authorization Number. Please be prepared to furnish your model and serial numbers. Return the equipment to ITI, freight prepaid.

Ship to:

Instrument Technology, Inc.
33 Airport Road
Westfield, MA 01085-1357

Please note Return Authorization Number on Purchase Orders, and all shipping documents.

Upon receipt of your equipment, ITI will assess its condition to determine if repairs are needed. If repairs are required, we will quote repair costs and a schedule for repairs. Your options at this point are:

1) Accept Repair

To proceed with the repair, ITI will require a purchase order for the full quoted repair price.

2) Decline Repair - Upgrade to a New Instrument

Choosing this option requires a purchase order for the new equipment at its quoted price. ITI will ship out the next available unit.

3) Decline Repair

Please Note - Most repair evaluations require a partial or complete disassembly of the equipment. **Once disassembled, it is impossible to return it to the customer in "as received" condition.** At the customer's option, ITI will either return your equipment in its disassembled state, or dispose of it.